

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

## ENVIRONMENTAL ASSESSMENT

**NUMBER:** DOI-BLM-CO-N05-2014-0047-EA

**CASEFILE/PROJECT NUMBER:** COC1491  
COC76440 (Bargath natural gas pipeline ROW)  
COC76440-01 (Bargath natural gas pipeline TUP)  
COC76439 (WPX RG 421-32-298 well pad ROW)  
COC76438 (WPX RG 421-32-298 access road ROW)

**PROJECT NAME:** WPX's proposed RG 24-29-298 well pad and associated wells (3) in the Black Sulfur Creek watershed

**LEGAL DESCRIPTION:** T. 2 S., R. 98 W., Sec. 29, 6<sup>th</sup> Principle Meridian

**APPLICANT:** WPX Energy Rocky Mountain, LLC.

**PURPOSE & NEED FOR THE ACTION:** The purpose of the action is to allow the development of Federal leases on BLM surface through the drilling of the proposed well and associated actions. The need for the action is established by the BLM's responsibility under the authority of the Mineral Leasing Act of 1920 as amended by the Federal Land Policy and Management Act of 1976 (FLPMA) to respond to the request to develop the Federal leases.

**Decision to be Made:** The Bureau of Land Management (BLM) will decide whether or not to approve the Applications for Permit to Drill (APDs) and associated infrastructure, 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 1/21/2014. External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register on 03/05/2014.

**Issues:** No issues were identified during public scoping.

## DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

**Proposed Action:** WPX Energy has requested authorization to construct the RG 24-29-298 well pad and drill three natural gas wells (RG 24-29-298, RG 713-29-298, and RG 421-32-298). The design of the proposed well pad currently allows for the accommodation of 22 wells on this location (Figures 1 and 2). The applicant also requests authorization to install approximately 60 feet of gathering line and 40 feet of access road to access the location. In addition, the applicant would install approximately 5,306 feet of temporary surface pipeline for completion operations. If approved and implemented, this action will result in approximately 6.38 acres of surface disturbance (Table 1).

**Table 1.** Proposed surface disturbance estimates for WPX's RG 24-29-298 well pad.

Disturbance Feature	Dimensions (L x W, feet)	Acres (working surface)	Acres (disturbance footprint)	Total Topsoil Removed (cubic yards, depth=12 in)
Well Pad	350 x 450	3.60	6.30	6,140
Access Road	40 x 30	0.03	0.00 <sup>a</sup>	
Pipeline (8 inch)	60 x 60 <sup>b</sup>	0.08	0.08	
Total			6.38	

<sup>a</sup> Operator has confirmed that the road disturbance will fall within the pipeline disturbance corridor.  
<sup>b</sup> The pipeline ROW would be 60 ft x 40 ft with an additional 20 ft width issued for construction as a temporary use permit.

The proposed well pad has been engineered to accommodate 22 natural gas wells.

Design Features: See Appendix A

**No Action Alternative:** Under the No Action Alternative, the proposed well pad and associated road and pipeline infrastructure would not be constructed, and the proposed natural gas wells would not be drilled.

**ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD:** None.

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

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

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5

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

## AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

**Standards for Public Land Health:** In January 1997, the Colorado BLM approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, special status species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis (EA). These findings are located in specific elements listed below.

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

Estimates of surface disturbance within the lease (COC1491 at the surface location) that are most likely attributed to oil and gas activities equal approximately 23 acres. This area represents 4 percent of the total area of the lease, which is approximately 600 acres in size.

Producing well density in the project area equals <1 producing well per square mile, while road density in the project area equals approximately 3 miles of road per square mile.

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

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

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

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

Determination <sup>1</sup>	Resource	Rationale for Determination
<b>Physical Resources</b>		
PI	Air Quality	See discussion below.
PI	Geology and Minerals	See discussion below.
PI	Soil Resources*	See discussion below.
PI	Surface and Ground Water Quality*	See discussion below.
<b>Biological Resources</b>		
NP	Wetlands and Riparian Zones*	There are no riparian or wetlands that would be influenced by the Proposed Action. The nearest system supporting riparian communities is Black Sulphur Creek, which is approximately one mile from the proposed location. The Proposed Action would not be expected to have any conceivable influence on riparian character along this channel.
PI	Vegetation*	See discussion below.
PI	Invasive, Non-native Species	See discussion below.
PI	Special Status Animal Species*	See discussion below.
NP	Special Status Plant Species*	No BLM sensitive plant species or their associated habitats were observed within 100 meters of project boundaries. The Dudley Bluffs bladderpod ( <i>Physaria congesta</i> ) and twinpod ( <i>Physaria obcordata</i> ) and suitable habitat were not observed within 600 meters of the project. There are no known occupied occurrences of either <i>Physaria</i> species within one mile of the project.
PI	Migratory Birds	See discussion below.
NP	Aquatic Wildlife*	There are no aquatic systems within the vicinity of the project area. The nearest system supporting higher order aquatic vertebrate species is Black Sulphur Creek which is located roughly one mile from the project area. This system supports Colorado River cutthroat trout and mountain sucker, both BLM sensitive species. The Proposed Action would not be anticipated to have any conceivable influence on either species or associated habitats.
PI	Terrestrial Wildlife*	See discussion below.
NP	Wild Horses	The proposed project is not located within the Piceance-East Douglas Herd Management Area or the North Piceance and West Douglas Herd Areas, therefore this project will generate no impacts to wild horses.

Determination <sup>1</sup>	Resource	Rationale for Determination
<b>Heritage Resources and the Human Environment</b>		
NP	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.
PI	Fire Management	See discussion below.
NI	Social and Economic Conditions	There would not be any substantial changes to local social or economic conditions.
NP	Environmental Justice	According to recent Census Bureau statistics (2000), there are no minority or low income populations within the WRFO.
NP	Lands with Wilderness Characteristics	There are no lands with wilderness characteristics identified within 2 miles of the Proposed Action.
<b>Resource Uses</b>		
PI	Forest Management	See discussion below.
PI	Rangeland Management	See discussion below.
NI	Floodplains, Hydrology, and Water Rights	The Proposed Action is not in a floodplain and is unlikely to impact surface hydrology. The project will use freshwater for operations with valid water rights.
PI	Realty Authorizations	See discussion below.
PI	Recreation	See discussion below.
PI	Access and Transportation	See discussion below.
NP	Prime and Unique Farmlands	There are no Prime and Unique Farmlands within the project area.
<b>Special Designations</b>		
NP	Areas of Critical Environmental Concern	The nearest ACEC is Dudley Bluffs which is 7.2 miles to the northeast of the Proposed Action. There will be no known impacts from the Proposed Action.
NP	Wilderness	There are no designated Wilderness areas or Wilderness Study Areas located 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.

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

\* Public Land Health Standard

## AIR QUALITY

**Affected Environment:** The Proposed Action is located within the White River Basin which is an attainment area for national and state air quality standards. The attainment designation means that no violations of ambient air quality standards have been documented in the area (EPA 2013). The Proposed Action is located more than 10-miles from any non-attainment or special designation airshed. Non-attainment areas are designated by U.S. Environmental Protection Agency (EPA) as having air pollution levels that persistently exceed the National Ambient Air Quality Standards (NAAQS). The closest non-attainment areas are along the Front Range corridor in Colorado and are in non-attainment for ozone. 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 Flat Tops Wilderness Area located east of the Proposed Action (designated Class I).

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. General conformity regulations require that federal activities do not cause or contribute to a new violation of NAAQS; that actions do not cause additional or worsen existing violations of the NAAQS; and that attainment of these standards is not delayed by federal actions in non-attainment areas.

The Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to set NAAQS (40 CFR part 50) for criteria pollutants. Criteria pollutants are air contaminants that are commonly emitted from a majority of emissions sources and include carbon monoxide (CO), lead (Pb), sulfur dioxide (SO<sub>2</sub>), particulate matter smaller than 10 and 2.5 microns (PM<sub>10</sub> and PM<sub>2.5</sub>), ozone (O<sub>3</sub>), and nitrogen dioxide (NO<sub>2</sub>).

The CAA established 2 types of NAAQS:

- **Primary standards:** – Primary standards set limits in order to protect public health, including the health of "sensitive" populations (such as asthmatics, children, and the elderly).
- **Secondary standards:** – Secondary standards set limits in order to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings.

The EPA regularly reviews the NAAQS (every five years) to ensure that the latest science on health effects, risk assessment, and observable data such as incidence rates are evaluated. The Colorado Air Pollution Control Commission (CAPCC), by means of an approved State Implementation Plan (SIP) and/or delegation by EPA, can establish state ambient air quality standards for any criteria pollutant that are at least as stringent as, or more so, than the federal standards. Ambient air quality standards must not exceed Colorado Ambient Air Quality Standards (CAAQS) and NAAQS in areas where the general public has access.

The Proposed Action is in Rio Blanco County within the Western Counties Monitoring Region of Colorado (APCD 2010). Local air quality parameters including particulates and ozone are measured at monitoring sites located at Meeker, Rangely, and Dinosaur and near the Flat Tops Wilderness Area. Ozone data have been collected at Federal reference air quality sites supported by the BLM since 2010 and located outside Meeker and Rangely. 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 short-term impacts on air quality near the drilling pad. Implementation of the Proposed Action would result in emissions of criteria pollutants, hazardous air pollutants (HAPs), and greenhouse gases (GHGs). Air quality would be impacted by engine exhaust from vehicles and any stationary fuel combustion sources during drilling and completion activities. Increases in the following criteria pollutants would occur due to combustion of fossil fuels: carbon monoxide, nitrogen dioxide, sulfur dioxide, and ozone (a secondary pollutant formed photochemically from volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>)). Emissions of particulate matter would be generated from construction, drilling, and during the production phase.

Particulate matter or dust is made up of a number of components, including acidic aerosols (such as nitrates and sulfates), organic chemicals, metals, soil or dust particles, and allergens (such as fragments of pollen or mold spores). Dust production is most likely during construction and drilling activities, especially when conditions are dry and/or windy. Fine particles (less than 2.5 µm) are efficient in scattering and absorbing light and are the major contributor to visibility problems. The effects of particulates include visibility degradation, climate change, vegetation damage and human health impacts. The chemical composition of PM<sub>2.5</sub> consists of five major components sulfate, nitrate, organic carbon, elemental carbon (also called black carbon), and crustal material.

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

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 west of this location. Ozone can cause breathing difficulties and worsen respiratory infections especially in the elderly, the young and those with pre-existing ailments such as asthma. Ozone also affects vegetation and ecosystems, leading to reductions in agricultural crop and commercial forest yields, reduced growth and survivability of tree seedlings, and increased plant susceptibility to disease, pests, and other environmental stresses (e.g., harsh weather). Generation of ozone under stagnate air masses, with continuous snow cover or in regions with soils with a low albedo can increase dramatically. Ozone produced under stagnant air masses can be transported many miles. The best way to reduce ozone in the atmosphere is to reduce the compounds that form it at its point of origin and at times when conditions favor the production of ozone.

Additional low, short-term impacts to air quality may occur due to venting or flaring of gas from wells and VOCs from pits, storage and treatment of cuttings, equipment leaks, and from tanks during drilling and completion activities. VOCs including hazardous air pollutants (HAPs) commonly associated with oil and gas production (benzene, toluene, ethylbenzene, xylene, and n-hexane) will be released from tanks, separation equipment and due to transportation of natural gas, produced water

and condensate by pipeline or trucks. The amount of these releases are difficult to estimate, but are expected to be within CDPHE air permit limits estimated in tons per year. Non-criteria pollutants (NAAQS have not been set for non-criteria pollutants), such as nitric oxide, air toxics (e.g., benzene), and total suspended particulates may experience slight, temporary increases as a result of the Proposed Action.

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

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

Cumulative Effects: Air quality in Region 11 (Western Slope of Colorado) is affected by both mobile and stationary emitters of air pollutant (CAPCD 2013). Fugitive dust can come from natural sources that are not preventable, such as volcanic eruptions, large regional dust storms, and wildfires. PM<sub>10</sub> and PM<sub>2.5</sub> are created from windblown dust and soil from fields, agricultural crops, agricultural livestock, paved road re-entrained dust, unpaved roads, construction activities, and mining and quarrying, construction sites, automobile and diesel engine exhaust, waste burning, soot from wood fires, and sulfates and nitrates from combustion sources such as industrial boilers (CAPCD 2013). Emissions of particulate matter would be generated from construction, drilling, and during the production phase. The following criteria pollutants would be emitted during the combustion of fossil fuels during construction, drilling and production: CO<sub>2</sub>, NO<sub>2</sub>, SO<sub>2</sub>, and ozone (a secondary pollutant formed photochemically from VOCs and NO<sub>x</sub>).

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

Nationally, about 55 percent of the oxides of nitrogen emissions come from on and off-road vehicles and about 28 percent come from industrial sources (CAPCD 2013). Industrial sources of NO<sub>2</sub>, CO, and SO<sub>2</sub> that affect air quality in this region include stationary source facilities such as gas compressor plants, sand and gravel pit operations. Portable industrial sources of these pollutants include facilities such as drill rigs, well completion activities, gravel crushers, and asphalt plants. Mobile (or non-point) sources of emissions within the region would include highway or on-road vehicles, off-road vehicles such as construction related equipment (track dozers, loaders, backhoes, etc.), and recreational vehicles (snowmobiles, ATVs, and dirt bikes). Smoke from grass and forest fires and natural dust events represent non-point source emissions that can also impact air quality.

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

*Environmental Consequences of the No Action Alternative:*

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

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

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

1. The operator will limit unnecessary emissions from 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. All access routes and pipeline ROWs will be treated with water and/or a BLM-approved chemical dust suppressant during construction and drilling activities so that there is not a visible dust plume behind vehicles. All vehicles will abide by company or public speed restrictions during all activities. If water is used as a dust suppressant, there should be no traces of oil or solvents in the water and it should be properly permitted for this use by the State of Colorado. Only water needed for abating dust should be applied; dust abatement should not be used as a water disposal option under any circumstances.

## **GEOLOGY AND MINERALS**

*Affected Environment:* Surficial geology of well pad RG 24-29-298 location is the Uinta Formation (Duncan). WPX's targeted zone is in the Mesaverde. During drilling potential water, oil shale, oil, gas, and sodium 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 pad and wells are located in the area identified in the White River ROD/RMP as available for sodium leasing and outside the area identified as available for oil shale leasing. This well pad is located in Oil and Gas Participating COC47638A and Federal Oil and Gas Lease COC01491. The bottom hole locations of the RG 24-29-298 and RG 713-29-298 wells are in COC01491 while RG 421-32-298 is located in COC68811. The design of the proposed well pad currently allows for the accommodation of 22 wells. Limited oil and gas exploration has occurred within a one mile radius of the proposed well pad. This consists of four plugged and abandoned wells, one producing well, and one temporarily abandoned well on six well pads (COGCC).

*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 these wells will deplete the hydrocarbon resources in the targeted formation. The Proposed Action is over six miles from the nearest sodium lease and would have minimal potential to effect existing or foreseeable sodium development.

**Cumulative Effects:** As mentioned above, the COGCC database identifies one producing and one temporarily abandoned oil and gas wells within a one mile radius of well pad RG 24-29-298. An additional 76 wells for full development of the natural gas resource within this one mile radius would be required if all of the 22 wells are developed and if bottom hole spacing of 20 acres is necessary for the recovery of the natural gas resources.

*Environmental Consequences of the No Action Alternative:*

**Direct and Indirect Effects:** The natural gas resources in the targeted zones would not be developed at this time.

**Cumulative Effects:** There would be no contribution for potential conflicts between 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 and pipelines that could be impacted by the Proposed Action are shown in Table 4. The Proposed Action would disturb approximately 6.4 acres for the pad and the access road and pipelines.

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

Soil Classification	Surface Texture	Erosion Hazard	Rutting Hazard	Potentially Impacted (Acres)
Redcreek-Rentsac complex, 5 to 30 percent slopes	sandy loam	Severe	Moderate	21
Piceance fine sandy loam, 5 to 15 percent slopes	fine sandy loam	Severe	Severe	9
Rentsac channery loam, 5 to 50 percent slopes	channery loam	Severe	Slight	4

Of the 34 acres analyzed no surface disturbance would occur on fragile soils or soils with landslide potential. All the soils have a severe erosion hazard rating and the Piceance fine sandy loam has a severe rutting hazard.

*Environmental Consequences of the Proposed Action:*

**Direct and Indirect Effects:** Unstable road surfaces and road surfaces not adequate for all-weather conditions, especially on roads with steep grades, can rut and rapidly lose drainage features

causing erosion and instability. With proper BMPs for stormwater, engineered access roads, construction, reclamation and mitigation, impacts to soils outside the 30 meter buffer around surface disturbance are not expected. Final reclamation on the pipeline would likely be achieved within 3 to 5 years after installation. Road sections that are rebuilt to improve turning radius will result in new disturbance that would likely be reclaimed with salvaged topsoil and should be stable and revegetated within 3 to 5 years.

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

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

Indirect impacts from this project could result in 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. Impacted soils would typically be removed or remediated on site and therefore loss of soil productivity would be temporary maybe 3-5 years.

Cumulative Effects: Well pad, pipelines and road are in the Piceance Outlet 5th-Level Hydrologic Unit Code watershed. This watershed is within the Mesaverde play area for natural gas and is expected to have 2-3 well pads per section for the majority of the watershed. Production wells include surface disturbance for well pads, pipelines, roads and support facilities. In addition to other oil and gas activity, dispersed recreation (hunting) will make use of BLM Road 1019 and will add to the wear of the road. Use of the road during poor conditions could result in failure of drainage features and additional road maintenance activities may be needed to keep this road in good shape. Livestock grazing occurs on public and private lands in the area and these activities may reduce canopy cover and lead to localized erosion in some reclamation areas.

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

*Environmental Consequences of the No Action Alternative:*

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

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

**Mitigation:**

1. The operator will surface BLM Road 1019 from the Junction of CR 85 to the pad site with at least 6 inches of roadbase and/or gravel to achieve an all-weather travel surface. This road base will be maintained through the life of the project. Road surfacing on this stretch of road will help maintain the drainage features of the travel surface and make dust mitigation more effective.
2. In order to protect public land health standards for soils, erosion features such as rilling, gullyng, piping and mass wasting on the surface disturbance or adjacent to the surface disturbance as a result of this action will be addressed immediately after observation by contacting the AO and by submitting a plan to assure successful soil stabilization with BMPs to address erosion problems.

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

**SURFACE & GROUND WATER QUALITY**

**Affected Environment: Surface Water:** The well pad is located in an ephemeral drainage which drains into Ryan Gulch, a tributary to Piceance Creek and the White River. Table 5 describes water segments that may be impacted by this project.

**Table 5. Water Quality Classification Table (CWQCC 2013)**

Segment	Segment Name	Use Protected	Protected Beneficial Uses			
			Aquatic Life	Recreation	Agriculture	Water Supply
16	All tributaries to Piceance Creek from the headwaters to the White River	No	Warm 2	Potential Primary Contact Recreation	Yes	No
15	Mainstem of Piceance Creek from Ryan Gulch to the White River	No	Warm 2	Potential Primary Contact Recreation	Yes	No

Segment 15 and 16, tributaries to Piceance Creek and the mainstem of Piceance Creek from Ryan Gulch to the White River are 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 16 on the monitoring and evaluation list for *E.coli*. Ryan Gulch is on Colorado’s 303d impaired waters and monitoring and evaluation list and Segment 15 is provisionally listed for aquatic life impairment (CWQCC 2012). These segments are protected for potential primary recreation and agriculture.

**Groundwater:** Precipitation in this area generally moves from areas of recharge to surface waters via alluvial aquifers and on the surface during spring melt and rain storms. A portion of annual precipitation infiltrates to deeper bedrock aquifers that contribute to contact springs. Springs and groundwater inputs generally occur in both bedrock and alluvial aquifers along valley bottoms. Perched groundwater zones occur locally when saturated zones contact differences in permeability and solubility of individual formations. These contact zones can occur in the ridges between surface water drainages and may be manifested as springs and seeps above the valley floor in outcrop areas.

Geological formations important for freshwater aquifers in this area are the Uinta and Green River Formations. The Green River Formation can be subdivided into an upper and lower aquifers separated by the Mahogany confining unit. The Uinta Formation and the upper Green River can be referred to as the upper aquifers and the primary aquifer is called the A-Groove. The zone in the Green River Formation below the Mahogany zone can be referred to as the lower aquifers where the primary aquifer is the B-Groove. Oil shale and naphthalite mining have occurred in and below the Mahogany zone. The upper aquifer in particular the Uinta formation is important for stock wells. Natural springs in the area are typically associated with the A or B Groove aquifers. This area is also an important recharge area for the baseflow in Piceance Creek.

Piceance Creek is largely fed by groundwater or base flow and less from snowmelt or rain storms. Irrigation for hay meadows along the valley alluvium comprises most of the water use out of Piceance Creek. Typically the highest sustained flows in Piceance Creek occur in the late fall and winter after irrigation ceases and the baseflow from groundwater again dominates the hydrograph. Groundwater is particularly critical for maintaining surface flows and providing water sources for wildlife and livestock in the form of stock wells and springs in this area.

*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 erosion and increased sedimentation to surface waters.

The soil analysis indicated the potential for severe rutting on the access road, therefore good road maintenance for drainage features and surfacing the road as described in the Proposed Action and mitigation in the soils section would reduce impacts. Typical road maintenance includes restoring the travel surface shape, road surfacing to maintaining an effective all-weather surface during drilling and production of the wells. This should reduce the risk of increased sedimentation to surface waters.

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 Ryan Gulch and Piceance Creek 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, groundwater and the baseflow it provides to perennial surface waters is critical to maintaining the function of these systems.

The proposed casing and cementing program for each of the wells has been designed to protect and/or isolate all usable water zones. Potential freshwater zones will be protected by surface casing, cementing behind these casing. 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 be freshwater aquifers. If drilling fluids are lost, aquifers may be contaminated by drilling additives. Using bentonite, freshwater and other additives that cannot contaminate groundwater mitigates the loss of drilling fluids since the introduction of these substances to freshwater aquifers would not impact the quality of these groundwater features.

Impacts to groundwater resources could occur due to failure of well integrity, failed cement, surface spills, and/or the loss of drilling, completion and hydraulic fracturing fluids into groundwater. Types of chemical additives used in drilling activities may include acids, hydrocarbons, thickening agents, lubricants, and other additives that are operator and location specific. Concentrations of these additives also vary considerably and are not always known since different mixtures can be used for different purposes in the same well bore. 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.

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 the 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 proper drilling and completion practices contamination of groundwater resources is unlikely.

Cumulative Effects: The well pad, pipelines and access road are in the Piceance Outlet 5th-Level Hydrologic Unit Code watershed. This watershed is within the Mesaverde Play Area for natural gas and is expected to have 2-3 well pads per section. Natural gas production wells result in surface disturbance for well pads, pipelines, roads and support facilities. In addition to other oil and gas activity, dispersed recreation (hunting) will make use of BLM Road 1019 and will add to the wear of the road. Use of the road during poor conditions could result in failure of drainage features and additional road maintenance activities may be needed to keep this road in good shape. Livestock grazing occurs on public and private lands in the area and these activities may reduce canopy cover and lead to localized erosion in some reclamation areas. Nacholite mining and oil shale research and development occur in Yellow Creek in the adjacent 5<sup>th</sup>-Level watershed to the west of the Proposed Action and could potentially impact groundwaters in the region.

*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, the operator will keep road inlet and outlet ditches, sediment retention basins, and culverts free of obstructions, particularly before and during spring run-off and summer convective storms. Provide adequate drainage spacing to avoid accumulation of water in ditches or on road surfaces.
2. To reduce erosion adjacent to roads and protect water quality in downstream public lands by maintaining the drainage features of the access roads, access roads will be surfaced with six inches of road base and/or gravel as described in the soils section. Maintenance will include restoring the travel surface shape, road surfacing to maintaining an effective all-weather surface during drilling and production of the wells.
3. 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.

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

## VEGETATION

**Affected Environment:** The site of the proposed RG 24-29-298 pad is split across two range sites. The northern portion lies in a Rolling Loam ecological site with a minor amount of pinyon/juniper encroachment into the Wyoming sagebrush (*Artemisia tridentata* spp. *wyomingensis*) community. The southern portion lies in a mid to late-seral Pinyon/Juniper ecological site characterized by a dense stand of mid-age pinyon (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) with a sparse herbaceous understory. Trees at the southern edge of the pad are mostly larger and older. There is a minor component of cheatgrass (*Bromus tectorum*) primarily in areas associated with earthen disturbance (roadsides) and it would readily spread into newly disturbed areas associated with this proposed pad. A summary of observed vegetation classes is indicated in Table 6.

**Table 6. Ecological Sites / Vegetation Classes Present on Proposed Lease Expansion Area**

Ecological Site / Woodland Type	Plant Community Appearance	Predominant Plant Species in the Plant Community
Rolling Loam (northern ½)	Sagebrush / Grass Shrubland	Wyoming big sagebrush, winterfat, low rabbitbrush, horsebrush, bitterbrush, western wheat grass, Indian rice grass, squirreltail, June grass, Nevada and Sandberg bluegrass
Pinyon/Juniper (southern ½)	Pinyon/Juniper Woodland	Pinyon pine, Utah juniper, mountain mahogany, bitterbrush, serviceberry, Wyoming big sagebrush, beardless bluebunch wheatgrass, western wheatgrass, June grass, Indian rice grass, mutton grass

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: Vegetation resources would be directly affected by the construction of this pad and its associated infrastructure on approximately 6.4 acres. Direct effects would involve removal of native vegetation, including numerous trees. After successful interim reclamation the majority of the disturbed area would be reclaimed and re-vegetated. Approximately 40 percent (2.6 acres) would remain un-vegetated for the life of the pad which is predicted to be approximately 35 years. Soil could be lost and/or damaged during the life of the project due to erosion, mixing of soil horizons, compaction, degradation during storage, and/or contamination. Limiting factors affecting re-vegetation success for affected soils could be exacerbated by operational activities and inadvertently by livestock grazing on unfenced reclaimed areas. Surrounding vegetation has potential to be affected by dust deposited from passing vehicles reducing its health, vigor, and palatability.

Noxious/invasive plant species could become an increased component of plant communities due to ground disturbance and seed dispersing activity in the area. Cheatgrass may be particularly problematic, as this species is capable of invading a variety of habitats, often becoming a dominant species. Cheatgrass is only palatable as a forage source for wildlife and livestock for a short portion of the growing season and its annual production is variable and unreliable.

Cumulative Effects: The proposed construction of the RG 24-29-298 pad and the associated infrastructure (access road/pipeline), when added to other projects and developments, in and near the project area, as well as within the Piceance Basin as a whole, would result in an increase in short-term removal of existing vegetation on public land. Long-term changes in plant community composition and structure would also occur on those project sites and on a broader scale from activities such as livestock grazing. Of the total potential vegetation removal near the project area and the Piceance Basin, the proposed project would not result in a noteworthy increase in vegetation disturbance or long-term changes in plant community. Anticipated effects would be similar to those cumulative effects described for soils.

*Environmental Consequences of the No Action Alternative:*

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

Cumulative Effects: Denial of the proposed project would have little impact on the cumulative effect of oil and gas development impacts to the vegetative communities in the Black Sulphur/Ryan Gulch area or in the Piceance Basin as a whole.

*Finding on the Public Land Health Standard #3 for Plant and Animal Communities:* Due to the historic, current, and future development of mineral resources and continued grazing in this area, the overall vegetative cover and productivity is diminished from the potential for this area. With implementation of mitigation measures and successful re-vegetation, the Proposed Action would likely increase vegetative cover and productivity to at least equal or possibly better than the surrounding landscape due to the application of reclamation measures and monitoring. Overall with successful reclamation of disturbances there would be no negative effect on the status of Land Health Standard 3 in the project area or at a landscape scale.

**Mitigation:**

1. For interim reclamation the BLM recommends Seed Mix #2 outlined in Table 7. It is recommended that seeding occur between September 1 and March 15. If an alternate date of seeding is requested, contact the designated Natural Resource Specialist prior to seeding for approval. Drill seeding is the preferred method of application and drill seeding depth must be no greater than ½ inch. If drill seeding cannot be accomplished, seed should be broadcast at double the rate used for drill seeding, and harrowed into the soil. Final reclamation will be completed using the reclamation practices and seed mixes recommended at that time.

**Table 7. Seed Mix #2 for Interim Reclamation of the RG 24-29-298 pad.**

<b>Cultivar</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Application Rate (lbs PLS/acre)</b>
Arriba	Western Wheatgrass	<i>Pascopyrum smithii</i>	4
Rimrock	Indian Ricegrass	<i>Achnatherum hymenoides</i>	3.5
Whitmar	Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>inermis</i>	4
Lodorm	Green Needlegrass	<i>Nassella viridula</i>	2.5
Timp	Northern Sweetvetch	<i>Hedysarum boreale</i>	3
	Needle and Thread	<i>Hesperostipa comata</i> ssp. <i>comata</i>	3

2. In the SUP where it addresses ripping compacted soils, ensure that ripping is completed before spreading topsoil. If topsoil will be stored for more than one year and other resource values can be accommodated, topsoil should be stored in piles with a depth of two feet or less to help retain soil viability.
3. To reduce erosion and reduce the risk of weed establishment, interim reclamation will be initiated when either there are no drilling activities expected on the pad for the next six months or there has been no activity on the pad within the last six months, regardless of whether or not there are outstanding approved APDs.
4. The maximum extent of disturbance for the well pad (e.g., the well pad footprint) will be fenced. Fencing should remain in place through successful interim reclamation and again through successful final reclamation to promote re-vegetation and reduce weeds. Fences, cattleguards, and gates (all built to BLM specification per BLM manual H-1741-1) will be installed, maintained, and removed by the operator upon approval by the AO. The fence around the pad must also have a wire gate installed adjacent to the cattleguard or at another appropriate location to be used in the case of livestock becoming entrapped inside the pad area. As part of final abandonment the fence around this pad will be reconstructed on the pre-disturbance fence alignment and all unneeded fence materials will be removed.
5. All seed tags will be submitted via Sundry Notice (SN) to the designated Natural Resource Specialist within 14 calendar days from the time the seeding activities have ended. The SN will include the purpose of the seeding activity (i.e., seeding well pad, cut and fill slopes, seeding pipeline corridor, etc.). In addition, the SN will include the well or well pad number associated with the seeding activity, if applicable, the name of the contractor that performed the work, his/her phone number, the method used to apply the seed (e.g., broadcast, hydro-

seeded, drilled), whether the seeding activity represents interim or final reclamation, the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied.

6. Each year by January 1<sup>st</sup> WPX will submit a Reclamation Status Report to the WRFO that includes the well number, API number, legal description, UTM coordinates, project description (e.g., well pad, pipeline, etc.), reclamation status (e.g., interim or final), whether the well pad and/or pipeline has been re-vegetated and/or re-contoured, date seeded, photos of the reclaimed site, acres seeded, seeding method (e.g., broadcast, drilled, hydro-seeded, etc.), and contact information for the person responsible for developing the report. The report will include maps showing each point (i.e., well pad), polygon, and/or polyline (i.e., pipeline) feature that was included in the report. The data must be submitted in UTM Zone 13N, NAD 83, in units of meters. In addition, scanned copies of seed tags that accompanied the seed bags will be included with the report. Internal and external review of the WRFO Reclamation Status Report and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report.
7. The operator shall meet the following reclamation success criteria, and these standards apply to both interim and final reclamation:
  - a) Self-sustaining desirable vegetative groundcover consistent with the site DPC (as defined by the range site, WRFO AIM protocol site data (BLM TN 440), ecological site or an associated approved reference site) is adequately established as described below on disturbed surfaces to stabilize soils through the life of the project.
  - b) Vegetation with eighty percent similarity of desired foliar cover, bare ground, and shrub and/or forb density in relation to the identified DPC. Vegetative cover values for woodland or shrubland sites are based on the capability of those sites in an herbaceous state.
  - c) The resulting plant community must have composition of at least five desirable plant species, and no one species may exceed 70 percent relative cover to ensure that site species diversity is achieved. Desirable species may include native species from the surrounding site, species listed in the range/ecological site description, AIM data, reference site, or species from the BLM approved seed mix. If non-prescribed or unauthorized plant species (e.g., yellow sweetclover, *Melilotus officinalis*) appear in the reclamation site BLM may require their removal.
  - d) Bare ground does not exceed the AIM data, range site description or if not described, bare ground will not exceed that of a representative undisturbed DPC meeting the Colorado Public Land Health Standards.

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

*Affected Environment:* There were no noxious weeds noted at the proposed pad location during the April 24, 2013 on-site inspection. There are few noxious weeds in the general area of this proposed pad. There is a scattering of houndstongue (*Cynoglossum officianale*) and cheatgrass (*Bromus tectorum*) throughout the general area especially in disturbed sites and along roadways. In the last several years Russian thistle (*Salsola spp.*) is becoming more prevalent in the general Piceance area and is also associated with and readily establishes in soil disturbance. Overall the area

surrounding the Proposed Action is relatively free of invasive, non-native plant species however there are numerous other weed species that occur in the general Piceance area and they are easily spread.

*Environmental Consequences of the Proposed Action:*

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

Cumulative Effects: Noxious and invasive weeds present in the general area are primarily associated with existing areas of development/disturbance. Further development actions associated with this proposal would create additional opportunity for noxious/invasive weed establishment. Existing roads and development related disturbances throughout the general area are common sources of weeds so elimination of these species from the general area is unlikely. The extent of infestation and persistence of weeds would be dependent on monitoring and treatment as part of future projects and activities in the general Piceance Creek area. Proposed mitigation including long term weed control would reduce the likelihood of long term negative impacts associated with this proposal.

*Environmental Consequences of the No Action Alternative:*

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

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

*Mitigation:*

1. Application of herbicides must 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).
2. A pre-disturbance weed survey must identify and quantify noxious and/or invasive weeds within the areas of direct and indirect use (i.e., within 100 meters of direct use), including access road/pipeline, and other associated surface disturbance. The weed survey report shall be submitted to the designated Natural Resource Specialist prior to initiating surface disturbing activities.
3. All seed, straw, mulch, or other vegetative material to be used on BLM and split-estate lands will comply with United States Department of Agriculture (USDA) state noxious weed seed requirements and must be certified by a qualified Federal, State, or county office as free of noxious weeds. Any seed lot with test results showing presence of State of Colorado A or B

list species will be rejected in its entirety and a new tested lot will be used instead. All areas identified to be disturbed under this proposal will 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 Authorized Officer.

4. Pesticide Use Proposals (PUPs) must 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. The WRFO recommends that all PUPs be submitted no later than March 1<sup>st</sup> of the year anticipating herbicide application.

## **SPECIAL STATUS ANIMAL SPECIES**

*Affected Environment:* There are no listed or proposed threatened or endangered animal species that are known to inhabit or derive important use from the project area. The endangered Colorado pikeminnow occupies the lower White River below Taylor Draw dam, about 56 miles downstream of the project area.

Brewer's sparrow and northern goshawk, both BLM sensitive species have potential to occur in the project area. Brewer's sparrow, a BLM sensitive species is discussed above in the Migratory Bird section. Analysis for migratory birds would be directly applicable to Brewer's sparrow as well.

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

Direct and Indirect Effects: Those portions of the White River occupied by the endangered Colorado pike minnow are over 50 valley miles downstream of the project area, however, water use attributable to fluid mineral development represents flow depletions from the upper Colorado River system and is an influence that has been determined by the U.S. Fish and Wildlife Service (FWS) to jeopardize the continued existence of the pikeminnow and three additional downstream species of endangered river fishes.

Given that the Proposed Action would result in the depletion of water from within the Colorado River basin, this project falls under BLM Colorado's Programmatic Biological Assessment (PBA) for water depleting activities associated with BLM's fluid minerals program in the Colorado River basin in Colorado (BLM 2008). Based on the assumptions used in BLM's programmatic analysis, annual water consumption for this project would amount to about 8 acre-feet (i.e., 1 rig at 3 wells developed per year @ 2.62 acre-foot per well).

In response to BLM's PBA, the FWS issued a Programmatic Biological Opinion (PBO)(ES/GJ-6-CO-08-F-0006) on December 19, 2008, which concurred with BLM's determination that water depletions are "Likely to Adversely Affect" the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker. Likewise, the project is also likely to adversely affect designated critical habitats for these endangered fish along the Green, Yampa, White, Colorado, and Gunnison rivers. However, the FWS also determined that BLM water depletions from the Colorado River Basin are not likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, or razorback sucker, and that BLM water depletions are not likely to destroy or adversely modify designated critical habitat.

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

Cumulative Effects: Cumulative effects for Brewer's sparrow would be similar to those discussed in the Migratory Bird and Terrestrial Wildlife sections below. With regards to Colorado pikeminnow, the well pad is designed to accommodate up to 22 wells. Should this be developed it its full potential, water consumption for the project would involve an additional 50 acre-feet.

*Environmental Consequences of the No Action Alternative:*

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

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

*Mitigation:* See mitigation in the Migratory Bird section.

*Finding on the Public Land Health Standard #4 for Special Status Species:* The larger area is moderately influenced by oil and gas activities however it likely does not detract considerably from the areas capacity to support special status species. Overall, the project area is largely meeting the land health standards for special status animal species. Neither the Proposed nor No Action alternatives would be expected to diminish habitat quality for special status species.

## **MIGRATORY BIRDS**

*Affected Environment:* The proposed location is largely surrounded by mixed aged pinyon-juniper woodlands to the south, west, and east and a large sagebrush park to the north. The project area is moderately influenced by oil and gas activities with a number of existing roads and pipeline corridors in the immediate vicinity. Several species of migratory birds make use of these communities during the breeding season (typically May 15 – July 15). Nest densities are likely reduced due to existing disturbances (roads and pipeline corridors) located mostly north of the well pad.

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 (ESA) if not given due consideration in land use decisions. Two pinyon-

juniper associated species which likely occur in the project area and are considered BCC are the juniper titmouse and Cassin's finch. The titmouse and finch occur widely in virtually all available woodlands, but at relatively low densities.

Brewer's sparrow, a BCC and BLM sensitive species, is 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 to the north of the project area provide nesting habitat for this species.

The development of reserve pits that contain drilling fluids have attracted waterfowl 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: Although well pad development would directly remove approximately 6.4 acres of woodland and sagebrush (3 acres woodland, 3.4 acres sagebrush) habitats, the Proposed Action is not anticipated to have any substantial influence on local bird populations. It is suspected that breeding bird densities are reduced to some degree due to the proximity of the location to existing roads and pipeline corridors. Based on breeding bird densities within the Resource Area, development of the proposed location may impact two to three breeding pairs. Construction and drilling activities would have the greatest potential to directly influence nesting activities and outcomes (including bird displacement, nest abandonment and potential mortality of nestlings) if they were to take place during the nesting season. Indirectly the Proposed Action could influence an additional 11 acres of functional forage and nesting habitat due to reductions in nest densities and avoidance of habitats associated with increased human activity, vehicle traffic, and construction activities within 100 meters of development. Activities conducted outside the breeding season would have no potential to directly or indirectly influence nesting outcomes. Prompt and effective reclamation would reduce the amount of direct habitat loss in the short term and may potentially provide an herbaceous cover and forage source for some migratory bird species.

It has been brought to the BLM's attention that in certain situations migratory waterfowl 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 project area that has been moderately influenced by oil and gas activities. The loss of roughly six acres of grassland/open shrubland habitats is not anticipated to have a measureable influence on local bird populations, especially since the surrounding area is moderately influenced by existing disturbance (pipelines and roadways). Prompt and effective interim reclamation would offset initial habitat loss in the short term (1-2 years) by providing a herbaceous forage and cover component for some migratory bird species.

*Environmental Consequences of the No Action Alternative:*

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

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

*Mitigation:*

1. Vegetation removal associated with well pad, road and pipeline development will take place outside the migratory bird nesting season of May 15 through July 15.
2. 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 method 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 northeast side of the well pad lies immediately adjacent to an existing gravel road and is located in well-developed portion of the Resource Area. A more detailed analysis is addressed in the Cumulative Effects section. The pinyon-juniper and Wyoming sagebrush communities that encompass the project area are classified as big game general winter range by Colorado Parks and Wildlife (CPW). These communities provide cover and forage resources for mule deer and elk from October through April in most years.

Mature components of pinyon-juniper woodlands surrounding the proposed location may provide nesting substrate for woodland raptors including red-tailed hawk, sharp-shinned hawk, Cooper's hawk, northern goshawk and several owl species. Cliff habitat/rock outcrops may also provide nest sites for species such as golden eagle and red-tailed hawk.

Small mammal populations are sparsely documented in the WRFO, however, recent BLM and CPW surveys found all shrub-steppe communities in this Field Office dominated by deer mouse and least chipmunk. The remaining species that are likely to occur in this area (e.g., montane vole) are less common, but display broad ecological tolerance and are widely distributed throughout the region. No narrowly distributed or highly specialized species or subspecific populations are known to inhabit this area.

*Environmental Consequences of the Proposed Action:*

Direct And Indirect Effects: The Proposed Action would directly remove roughly 6.4 acres of sagebrush (3.4 acres) and woodland (3 acres) habitat which provides forage and cover resources for local big game species. These communities generally take anywhere from 20-30 years (sagebrush) to several hundred years (woodlands), depending on stand age to return to preconstruction conditions.

The removal of 6.4 acres would result in an incremental reduction in big game winter range. Prompt and effective interim reclamation would be expected to offset herbaceous loss to a certain degree.

Activities associated with construction and drilling (noise, traffic etc.) have the potential to indirectly influence big game populations within close proximity of the project area and would be largely dependent on construction and drilling timeframes. Behavioral response of big game to human activity varies in degree, but is almost universally credited with elevating energetic demands and indirectly reducing the availability of forage and cover resources through the act of avoidance. It is suspected that because these ranges receive the greatest use during the winter months, activities taking place during this timeframe would have greater potential to influence local big game populations.

A raptor survey was conducted within 400 meters of the proposed location in June 2013. No raptor nests were documented within this buffered area (~117 acres). Additionally, no raptors were observed incidentally during surveys. Suitable cliff habitat was not present within 0.50 miles of the project location. Development of the proposed well pad would result in the direct loss of about three acres of immature woodland habitat that is within 100 meters of an existing gravel road. Due to the age of the trees and proximity to existing disturbance, it is unlikely the development of the well pad would have conceivable influence on local raptor population. Indirect impacts associated with well development and drilling would not be anticipated as there was no evidence of nesting birds within the project area.

Although well pad development would result in loss of forage and cover resources for nongame mammals and birds, it is unlikely this would have any substantial influence on local populations (see also discussion in Migratory Birds). It is suspected that densities of nongame species are reduced to some extent due to the road/pipeline network immediately within and adjacent to the proposed location. Loss of herbaceous cover would be short-term if interim reclamation is done in a timely manner.

Cumulative Effects: The immediate project locale is moderately influenced by existing natural gas extraction and processing facilities, with heavier development located north of the project area. Well pad development would result in the incremental reduction in big game winter ranges. It is suspected that big game inhabiting the area would be accustomed to some degree to activity/disturbance and it is unlikely that, in the long term, the loss of six acres would have little additive influence on the character or utility of habitats in the support of big game and nongame species.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: There would be no direct or indirect impacts to terrestrial wildlife species or associated habitats 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 lands surrounding the proposed location are generally meeting the land health standards for terrestrial communities. There is a moderate amount of oil and gas development activity that likely detracts (to some degree) from the areas capacity to support big game winter use functions. However, these

impacts derive largely from behavioral response (i.e., habitat disuse from avoidance) to human activity and do not alter the long term prospects for regaining the utility of habitat lost over the course of development. In the long term and from the landscape perspective, the Proposed Action and No Action alternatives would have no influence on physical aspects of the land health standard.

## CULTURAL RESOURCES

*Affected Environment:* The proposed RGU 24-29-298 well pad location and access have been covered by all or parts of two Class III (100 percent pedestrian) inventories (Conner 2002 compliance dated 7/1/2002, Davenport 2013 compliance dated 9/5/2013) which did not identify any surface manifestations of cultural resources within the inventoried areas.

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

Direct and Indirect Effects: The Proposed Action will not impact any known cultural resources. There is a small potential for undetected subsurface remains at the well pad location which if impacted by construction could be seriously impacted or destroyed by construction. This would represent a loss of unquantifiable data from the regional archaeological database.

Cumulative Effects: If subsurface remains are present and damaged or destroyed by development it would constitute a long term, permanent, irreversible and irretrievable loss to the regional archaeological database.

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

Direct and Indirect Effects: There would be no new construction or development related impacts to any cultural resources within 1,000 feet (305 meters) should any exist on the surface or subsurface under the No action Alternative.

Cumulative Effects: Cumulative impacts to the archaeological database would likely occur at a very slow rate to any subsurface materials, should any be present. The loss of data would be at a very slow rate, related to the rate of soil erosional loss and would likely not represent an unacceptable loss since future inventory for development might identify the previously undetectable remains.

### *Mitigation:*

1. The operator 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 well pad, access and well tie pipeline route are located in an area generally mapped as the Uintah Formation (Tweto 1979) which the BLM has categorized as a Potential Fossil Yield Classification (PFYC) 5. Formations that are classified as PFYC 5 formations are known to produce scientifically important fossil resources (c. Armstrong and Wolny 1989)

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

Direct and Indirect Effects: If it should become necessary to excavate into the underlying sedimentary rock to level the well pad, excavate the drill rig cellar, excavate any reserve/blooi/cuttings pits, construct the access road or bury any of the proposed well tie pipelines there is a potential to impact scientifically important fossil resources. If interim reclamation is not completed in a timely there is a potential for increased erosion which could also result in a loss of fossil resources, especially the smaller and more fragile remains that might be present. Further, increased human presence and activity in the area could, potentially, result in an increase of unlawful collection of fossil resources.

Cumulative Effects: Any impacts to the fossil resources in the area, direct or indirect, would result in a long term, permanent, irreversible and irretrievable loss of scientific data from the regional paleontological database.

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

Direct and Indirect Effects: Under the No Action Alternative there would be no construction related impacts to any fossil resources in the proposed project area. Erosion, livestock trampling and possible fossil collection by visiting people could continue to result in a slow, difficult to measure rate.

Cumulative Effects: Any such losses from erosion, livestock trampling and fossil collection would be considered a long term, permanent, irreversible and irretrievable but at a rate that is not currently considered unacceptable.

### *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 or other scientifically important fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.

2. If any paleontological resources are discovered as a result of operations under this authorization, the 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. The BLM developed the Visual Resource Management system to identify and evaluate an area's scenic value. The visual resource inventory (VRI) process described in BLM Manual H-8410-1 establishes VRI classes, which are used to assess visual values for areas of the landscape. VRI classes II, III, and IV are determined by using a combination of three components: scenic quality, sensitivity level, and distance zones, with Class II having a higher level of value and Class IV having the least visual value. VRI Class I areas are assigned to special management areas, such as Wilderness Study Areas, which are the most valued landscapes. The VRI classes are the baseline from which environmental effects are measured. The Proposed Action is located in Visual Resource Inventory Class IV, which means this area is a lesser valued scenic landscape. The area of the landscape where the Proposed Action is located was placed into VRI Class IV as a result of a composite of the three above mentioned components. The area received a low Scenic Quality scoring of C (A, B, and C type rating). Other determining factors for the VRI class IV rating for this area were a result of the Sensitivity Level rating as moderate value to the public, and the project being located in a Distance Zone of Background.

The BLM also maintains four Visual Resource Management (VRM) classes used to describe the level of acceptable change allowable at a given location. Scenic values in the BLM White River Resource Area have been classified according to the Visual Resource Management (VRM) system into four Visual Resource Management Classes (I-IV), and corresponding VRM objectives were established in the 1997 White River ROD/RMP. VRM Class I are the most restrictive with VRM Class IV being the least restrictive for the amount of allowable change to occur on the landscape. The VRM objectives provide the amount of allowable change and are considered a resource-allocation. 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 in VRM III areas should be moderate. Management activities in these areas 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 in the upper Ryan Gulch drainage area in the Piceance Basin. This panoramic landscape consists of vast gently sloping topography of parallel similar ridges that slope from the west towards the east. Scattered stands of pinyon-juniper contrasting with the sagebrush and grasses provide texture to the landscape. The Proposed Action would primarily be viewed from BLM Road 1019 (Hog Lot Ridge) by oil and gas employees, local ranch operators, big game hunters, and other recreationalists. This somewhat remote area is approximately 8 miles from Rio Blanco County Road 5 (Piceance Creek), the nearest two-lane paved road and approximately 38 miles from Meeker, CO, the nearest town.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The construction of the well pad, pipeline, and access road includes a total of approximately 6.4 acres of ground disturbance for the initial construction period. The exposed soils created by this construction activity and associated linear road and pipeline disturbance will create short term moderate impacts to the landscape characteristics from the construction start until interim reclamation. Upon completing interim reclamation, areas of exposed soils will be reduced and other formerly disturbed acres will then have some vegetation growing. In areas that had pinyon and juniper woodlands removed during well pad construction, the visual impact of contrasting vegetation of grass and soils with adjacent woodlands may be somewhat noticeable for several decades and will slowly blend with the landscape over time. This may be especially noticeable along the southwestern portion of the well pad where areas of somewhat dense pinyon-juniper are proposed to be removed in order to construct this pad. The unnatural shape and color contrast of all above ground structures could cause moderate long term impacts to casual observers, if not mitigated. To reduce this impact, it is recommended that all permanent above ground structures (on-site for six months or longer) including tanks, associated production equipment, and any piping and valves be painted, Juniper Green according to the BLM Standard Environmental Chart CC-001: June 2008. This color should best serve to blend these structures with the pinyon-juniper trees that surround the proposed well pad locations. To those traveling BLM Road 1019 the Proposed Action will be very noticeable during the construction period and less noticeable after interim reclamation has been completed. Overall, the implementation of the Proposed Action will not change the Visual Resource Inventory Class IV rating and will meet the Visual Resource Management Class III objective of partially retaining the existing character of the landscape in this area.

Cumulative Effects: Combined with other existing, ongoing, and foreseeable oil and gas development activities in the area, the Proposed Action may begin to contribute to an increasingly impacted visual landscape.

*Environmental Consequences of the No Action Alternative:*

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

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

*Mitigation:*

1. Paint and maintain the paint on all permanent above ground structures (on-site for six months or longer) including tanks, associated production equipment, and any piping and valves, Juniper 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.

Pipeline abandonment procedures listed in the Proposed Action describe pipeline abandonment procedures during final reclamation with the exception of flushing and properly disposing of any fluids in the lines. With the pipelines WPX is proposing to install as part of the project and ultimately abandon, there is potential if not abandoned properly for there to either be a spill of produced water or a release of natural gas. With proper pipeline abandonment procedures followed, implementation

of the mitigation measures and adherence to the COAs, the potential risk for a release during or following abandonment will be greatly reduced.

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 project area, while 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 lessees/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.

## **FIRE MANAGEMENT**

*Affected Environment:* The Proposed Action is located within the C6-W Lower Piceance Basin Fire Management Polygon with a vegetation composition of primarily pinyon-juniper woodlands and Wyoming big sagebrush. The resource management objective is to manage naturally ignited fires throughout this polygon to promote a vegetation mosaic with varying successional stages. Natural fire management objectives are emphasized in order to benefit multiple resource goals when prescriptive parameters allow. The fire regime/condition class for this fire management polygon is currently at a two, or is land considered to have been moderately altered from its historical fire return interval.

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

Direct and Indirect Effects: During a wildfire event, the primary objective is firefighter and public safety. While in the construction phase of the proposed project, the appropriate management response may be full suppression. The direct effect will be the temporary suspension of the use of naturally ignited fire to meet multiple resource management objectives. Once the project is complete, the man-made vegetation breaks would alter the behavior of wildfires in the area, and help to create areas that may be suitable for use as fire breaks to help control wildfires.

Cumulative Effects: While natural gas drilling within the area continues there may be difficulties in full implementation of the Northwest Colorado Fire Program Area Fire Management Plan due to public safety concerns. Only when drilling operations decrease will fire and resource managers allow naturally ignited fire to create a vegetation mosaic representing various plant communities in different successional stages.

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

Direct and Indirect Effects: No vegetation alteration or construction would occur under this alternative. This may allow for full implementation of the Fire Management Plan.

Cumulative Effects: If there is a decrease in energy related infrastructure, naturally ignited fire may create a successional change in vegetation and bring the area closer to a fire regime/condition class one or an area with a natural (historical) range of variability of vegetation characteristics, fuel composition, fire frequency, and fire severity. Without new oil and gas development and infrastructure, there would be fewer human related vegetation breaks which have

been used to control fires in the past. If fires are to be directly suppressed it could lead to increases in fire suppression costs.

*Mitigation:*

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

**FOREST MANAGEMENT**

*Affected Environment:* The Proposed Action is located within a productive exposure stand classes of pinyon/juniper woodlands as defined by a survey performed in 2003-2005 by White River Field Office personnel. Productive exposure types occur on primarily lower gradient slopes and on north and east aspects. Growth rates are higher in these areas due to soil features which allow for effective use of precipitation. This habitat type is further broken down based on the age class of the stand. In this case the affected stand is mature. Mature pinyon/juniper trees on productive exposure establish themselves as the dominant plant community on the site. Mature stands are valuable locally as a source of fire wood.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The following table shows the estimated loss of woodland acres as a result of the Proposed Action. Following reclamation of it is expected that pinyon/juniper will invade the site within 50-70 years and would develop a mature stand within 200-300 years. Under the Proposed Action about 2.6 acres of woodlands would be removed (Table 8). Impacts would be long-term until woodlands regenerate successfully.

**Table 8.** Summary of total acres of woodland that would be removed for the RG 24-29-298 wellpad.

Project Name	Acreage In Woodlands		
	Acres Disturbed (Total)	Stand Class	Total Cords
RG 24-29-298 Wellpad	2.6	Pinyon Juniper /Productive/ Mature	18

**Cumulative Effects:** Removal of mature and middle-aged pinyon/juniper trees would reduce the potential for outbreak of woodland diseases and pest infestations. By reducing the stand size of pinyon/juniper trees in areas historically included in sagebrush and grass communities, it would increase the open areas preferred as foraging areas by wildlife and livestock. Acceptance of mitigation measures would reduce the build-up of cleared woody material from the Project Area, reducing the likelihood of slash contributing to possible large fire.

*Environmental Consequences of the No Action Alternative:*

**Direct and Indirect Effects:** Under this alternative there would be no construction of RG 24-29-298 wellpad and no removal of pinyon/juniper woodlands.

**Cumulative Effects:** Under this alternative, pinyon/juniper woodlands would not be removed and would continue to persist and age. The current stands contain several trees that possess old growth characteristics. If these stands are not removed they will continue to age eventually becoming decadent old growth stands.

*Mitigation:*

1. In accordance with the 1997 White River RMP/ROD, all trees removed in the process of construction shall be purchased from the BLM. Trees should first be used in reclamation efforts and then any excess material made available for firewood or other uses.
  - a) Woody materials required for reclamation shall be removed in whole with limbs intact and shall be stockpiled along the margins of the authorized use area separate from the topsoil piles. Once the disturbance has been recontoured and reseeded, stockpiled woody material shall be scattered across the reclaimed area where the material originated. Redistribution of woody debris will not exceed 20 percent ground cover. Limbed material shall be scattered across reclaimed areas in a manner that avoids the development of a mulch layer that suppresses growth or reproduction of desirable vegetation. Woody material will be distributed in such a way to avoid large concentrations of heavy fuels and to effectively deter vehicle use. Woody materials that are to be stockpiled along margins and not used in the topsoil should not exceed pile dimensions of 8 x 8 x 8 feet. Materials used in the stockpiles should be a variety of diameters, but should be no smaller than 6 inches in diameter. Additionally the piles should be no less than 30 feet apart.
  - b) Trees that must be removed for construction and are not required for reclamation shall be cut down to a stump height of 6 inches or less prior to other heavy equipment operation. These trees shall be cut in four foot lengths (down to 4 inches diameter) and placed in manageable stacks immediately adjacent to a public road to facilitate removal for company use or removal by the public.

## **RANGELAND MANAGEMENT**

*Affected Environment:* The proposed RG 24-29-298 pad location is in the Equity Swizer pasture of the Square S Allotment # 06027. The total allotment consists of 75,739 acres, including 64,050 federal acres, 9,437 State of Colorado acres, and 2,252 private acres. The Square S allotment is permitted to both the LOV Ranch (504241) and the Mantle Ranch (501432) for livestock grazing totaling 3,522 AUMs. The Equity-Swizer pasture is grazed by cattle belonging to the Mantle Ranch for approximately six weeks in June and July and again briefly in the fall as livestock trail through

from summer pastures. During the on-site inspection (April 24, 2013) it was noted that the herbaceous component especially in the pinyon/juniper dominated portion of the site was sparse. The amount of bare ground was higher than normal and there was a moderate level of pinyon/juniper encroachment into the sagebrush park.

Rangeland Improvements: There is a pasture division fence that bisects the proposed pad location.

There are not any range trend monitoring sites nearby that would be affected by the implementation of the Proposed Action.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: If construction occurs during the period livestock are permitted in this area they will likely avoid the area adjacent to the proposed development during the period of intense noise and activity levels. During this period there is increased risk of injury to livestock. After construction is complete, livestock will likely be minimally affected or even unaffected by the presence of production facilities. The proposed pad is near a livestock watering pond and this pasture is grazed yearly during the growing season so livestock grazing use at this time would likely reduce the success of re-vegetation efforts.

This Proposed Action could interfere with proper functioning of the range improvements near the proposal. The fences and water sources in this area are necessary for control of cattle to achieve grazing objectives on the grazing allotment and to keep cattle from straying into the wrong grazing use area. Damage to fences or gates left open interfere with control of cattle and ultimately with proper utilization of the rangeland resource. Damage to watering facilities could affect water availability and distribution of livestock, resulting in increased grazing pressure on areas that have water available for livestock. These impacts would be greatest during the construction phases, especially if construction coincides with livestock use of the area in spring or late fall.

Construction of the RG 24-29-298 pad will remove 6.4 acres of vegetation. Until construction disturbance is successfully reclaimed and re-vegetated there would be a short term loss of less than one AUM in the Equity-Swizer pasture associated with this pad. After successful interim and final reclamation there would likely be a slight increase in forage production until the sites progress back to shrub/tree domination. The short-term forage loss within this pasture would be less than the annual fluctuation in forage production and would not be expected to result in any need for changes in livestock numbers or grazing period.

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

*Environmental Consequences of the No Action Alternative:*

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

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

*Mitigation:*

1. When constructing the pad, ensure that any reconfiguration of the road will not reduce or prevent surface flow from the roadway from reaching the small pond approximately 100 meters to the north of the pad.
2. Where the main body of the pad will remove a section of the pasture division fence, ensure that the proposed fence that is reconstructed around the pad is constructed to maintain the function of this fence in controlling livestock movement through the area. If construction will occur during the timeframe livestock are in the area a temporary fence will need to be constructed until the longer-term fence can be built. See Vegetation mitigation for fence construction requirements.
3. The operator must coordinate with the livestock grazing permittee (Mantle Ranch) authorized to graze livestock within the project area a minimum of 72 hours prior to construction activities associated with this permit. Livestock grazing permittee contact information may be found at [www.blm.gov/ras/](http://www.blm.gov/ras/) or by contacting the WRFO Range staff (970-878-3800). The operator will provide the grazing permittee the location, nature, and extent of the anticipated activity being completed.
4. Any range improvement projects such as fences, water developments, cattleguards, gates, or other livestock handling/distribution facilities that are damaged or destroyed either directly or indirectly as a result of implementation of the Proposed Action shall be promptly (at least prior to the livestock grazing permittee's need to utilize the range improvement) be repaired or replaced by the operator to restore it to at least its pre-disturbance functionality. If the operator damages any range improvement project(s) the operator will notify the Authorized Officer through Sundry Notice (Form 3160-5) and identify the actions taken to repair the feature(s).

## **REALTY AUTHORIZATIONS**

*Affected Environment:* The well pad for the RG 421-32-298 well is off-lease; therefore, rights-of-way (ROWs) would be required for the well pad and access road. The natural gas pipeline requires a ROW because the pipeline would be authorized to Bargath, a third party gathering company. Existing pipeline ROWs authorized to Enterprise Gas Processing (COC69548) and Bargath/XTO Energy (COC74137) along BLM Road 1019 are located near the Proposed Action.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The eight-inch natural gas pipeline corridor (ROW COC76440) to serve the RG 24-29-298 well pad would be 60 ft long, 40 ft wide, and contain approximately 0.055 acres. The Government 29-3 well pad would be used as a staging area during construction of the gas pipeline associated with the RG 24-29-298 well pad. An additional 20 ft width along the length of the pipeline would be needed for construction of the pipelines. The temporary use permit (TUP COC76440-01) for construction of the pipeline to serve the RG 24-29-298 well pad would be 60 ft

long and 20 ft wide plus the dimensions of the Government 29-3 well pad (200 ft by 300 ft) for a total of approximately 1.405 acres. The off-lease access road (ROW COC76438) along BLM Road 1019 to serve the RG 421-32-298 well would be 5,732 ft long, 35 ft wide, and contain approximately 4.606 acres. The off-lease well pad for the RG 421-32-298 well would be 350 ft by 450 ft and contain approximately 3.616 acres. Damage to the facilities or rights of existing ROW holders could occur if construction activities are not properly planned and other ROW facilities are not properly identified prior to construction. If accurate "as built" mapping is not provided to BLM, conflicts may develop in the future with other ROW holders.

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

*Environmental Consequences of the No Action Alternative:*

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

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

*Mitigation:*

1. The holder will effectively coordinate with existing ROW holders (Enterprise Gas Processing and Bargath/XTO) prior to construction activity.
2. The holder shall provide the BLM AO with data in a format compatible with the WRFO's ESRI ArcGIS Geographic Information System (GIS) to accurately locate and identify the ROW and all constructed infrastructure, (as-built maps) within 60 days of construction completion. Acceptable data formats are: (1) corrected global positioning system (GPS) files with sub-meter accuracy or better; (2) ESRI shapefiles or geodatabases; or at last resort, (3) AutoCAD .dwg or .dxf files. Option 2 is highly preferred. In ALL cases the data must be submitted in Universal Transverse Mercator (UTM) Zone 13N, NAD 83, in units of meters. Data may be submitted as: (1) an email attachment; or (2) on a standard compact disk (CD) in compressed (WinZip only) or uncompressed format. All data shall include metadata, for each submitted layer, that conforms to the Content Standards for Digital Geospatial Metadata from the Federal Geographic Data Committee standards. Questions should be directed to WRFO BLM GIS staff at (970) 878-3800.
3. Construction activity should take place entirely within the areas authorized in the ROW grants and temporary use permit.
4. At least 90 days prior to termination of the ROW, the holder shall contact the AO to arrange a joint inspection of the ROW. The inspection will result in the development of an acceptable termination and rehabilitation plan submitted by the holder. This plan shall include, but is not limited to, removal of facilities, drainage structures, and surface material (e.g., gravel or concrete), as well as final recontouring, spreading of topsoil, and seeding. The Authorized Officer must approve the plan in writing prior to the holder's commencement of any termination activities.

5. No surface disturbing activities shall take place on the subject right-of-way until the associated APD is approved. The holder will adhere to special stipulations in the Surface Use Program of the approved APD, relevant to any right-of-way facilities.
6. Boundary adjustments in Oil and Gas lease/unit COC68811 shall automatically amend this right-of-way to include that portion of the facility no longer contained within the above described lease/unit COC68811. In the event of an automatic amendment to this right-of-way, the prior on-lease/unit conditions of approval of this facility will not be affected even though they would now apply to facilities outside of the lease/unit as a result of a boundary adjustment. Rental fees, if appropriate shall be recalculated based on the conditions of this grant and the regulations in effect at the time of an automatic amendment.

## RECREATION

*Affected Environment:* The Proposed Action occurs within the White River Extensive Recreation Management Area (ERMA). The BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use. The project site is located in the Recreation Opportunity Spectrum (ROS) classification area of Semi-Primitive Motorized. Areas within this classification are characterized by a largely natural appearance and are accessible by foot, horseback, bike or motor vehicle generally on native-surfaced roads or gravel. Interaction with other visitors is relatively low. There are minimum on-site controls and restrictions, and the area provides for a moderate probability of experiencing isolation, remoteness, and closeness to nature. The primary recreation activity in this area is upland big game hunting from late August through December of each year with peak use from mid-October through mid-November. The Proposed Action is located within the Colorado Parks and Wildlife (CPW) Game Management Unit (GMU) 22, which is a somewhat popular big game hunting area where hunters have good opportunities to pursue both mule deer and elk. There are 13 Special Recreation Permits (SRPs) which authorize use that overlaps the Proposed Action for commercially outfitting and guiding for mountain lion hunting. These SRPs are authorized for all BLM lands within the WRFO. There is one SRP which authorizes use that overlaps the Proposed Action for commercially outfitting and guiding for big game hunting. This SRP is authorized on extensive public lands in the Piceance Basin area.

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

Direct and Indirect Effects: Due to the Proposed Action, there would be a direct disturbance of approximately 6.4 acres of land currently available for dispersed recreation activities during the initial construction period. Some displacement of recreationists may occur during construction, particularly to those seeking a more primitive oriented backcountry recreation experience. Based on the proposal to drill two wells, well pad construction and drilling activities may coincide with some of the various big game hunting seasons (late August through December). This means there may be a disruption to the hunting experience in these localized settings during these activities. Because this proposal is located in an area within extensive public lands, it is likely that those seeking big game hunting opportunities in this area will be able to find similar hunting and camping opportunities on nearby public lands. After the construction period and once interim reclamation has been completed, the amount of ground disturbance would be greatly reduced. Also, operational activities during the production phase would be much less disruptive to dispersed camping in the area, big game hunting, and those seeking a more primitive oriented recreation experience.

Cumulative Effects: Combined with other existing, ongoing, and foreseeable oil and gas development and mining development activities in the area, the Proposed Action may begin to contribute to an increasingly impacted landscape with reduced recreational opportunities and undesired recreational experiences, and impacts recreational settings.

*Environmental Consequences of the No Action Alternative:*

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

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

*Mitigation:* None.

## **ACCESS AND TRANSPORTATION**

*Affected Environment:* The primary access to the Proposed Action includes traveling west approximately 20 miles on State highway 64 from Meeker, CO to the junction with Rio Blanco County (RBC) Road 5 (Piceance Creek). Then travel approximately 18 miles south on RBC Road 5 to the junction with RBC Road 26. Then travel approximately 7 miles west on RBC Road 26 (Black Sulphur) to the junction with RBC Road 85 (Duckett). Then travel approximately 1.5 miles on RBC Road 85 to the junction with BLM Road 1019 (Hog Lot Ridge). Then travel approximately 1 mile on BLM 1019 to the Proposed Action. The roads surrounding the Proposed Action are traveled primarily by oil and gas employees, local ranch operators, big game hunters, and other recreationalists. According to the White River ROD/RMP, motorized vehicle travel is restricted to the existing roads and trails year round in the area of the Proposed Action.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The Proposed Action is expected to result in incremental increases in traffic and potentially increased travel times on the above described portions of routes, especially during the construction and drilling periods. These impacts are expected to be temporary in duration, have minimal impacts to other users of these routes, and the applicant has committed to maintaining routes used in conjunction with the Proposed Action to current conditions or better throughout the life of the proposed project. Because the proposed access road is to be used only for accessing the well pad, the Proposed Action is not expected to increase access to public lands in this area. There is potential for roads and routes to be damaged if construction activities associated with the Proposed Action occur when roads and routes are saturated. To prevent road and pipeline route damage as a result of use of these roads and routes when they are saturated it is recommended that all activity cease when soils or roads surfaces become saturated to a depth of three inches.

Cumulative Effects: None identified as a result of the Proposed Action.

*Environmental Consequences of the No Action Alternative:*

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

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

*Mitigation:*

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

**REFERENCES CITED:**

- Armstrong, Harley J., and David G. Wolny  
1989 Paleontological Resources of Northwest Colorado: A Regional Analysis. Museum of Western Colorado, Grand Junction, Colorado.
- Colorado Air Pollution Control Division (CAPCD)  
2013 Colorado Air Quality Data Report 2012, Colorado Department of Public Health and the Environment Air Pollution Control Division (APCD-TS-B1).
- Colorado Water Quality Control Commission (CWQCC)  
2012 Regulation No. 93 Colorado's Section 303(D) List of Impaired Waters and Monitoring and Evaluation List, Effective March 30, 2012. (Accessed 5/24/2013)
- Colorado Water Quality Control Commission (CWQCC)  
2013 Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin, Effective September 30, 2013. (Accessed 1/15/2014)
- Conner, Carl E.  
2002 Class III Cultural Resources Inventory for Five Proposed Well Locations (RG #397-8-12, RG#297-30-12, RG# 298-34-41, RG#298-26-12, RG# 298-29-24) in Rio Blanco County. Grand River Institute, Grand Junction, Colorado. (02-11-03: SHPO# RB.LM.NR1254)
- Davenport, Barbara j.  
2013 Class III Cultural Resources Survey for the Proposed RG 24-29-298 Well Location in Rio Blanco County, Colorado for WPX Energy Rocky Mountain LLC. Grand River Institute, Grand Junction, Colorado (13-11-24: SHPO # RB.LM.NR2363)
- Duncan, D. C.  
1976 Preliminary Geologic Map of the Yankee Gulch Quadrangle, Rio Blanco County, Colorado: U.S. Geological Survey Miscellaneous Filed Studies Map MF-758.
- Environmental Protection Agency (EPA).  
2013 Currently Designated Non-Attainment Areas for all Criteria Pollutants. Updated December 5, 2013. Available online at: <http://www.epa.gov/oaqps001/greenbk/ancl.html>. (Accessed 1/27/2013)
- Natural Resource Conservation Service, USDA (NRCS). 2008. Soil Survey of Rio Blanco County, Colorado.

Tweto, Ogden

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

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

**INTERDISCIPLINARY REVIEW:**

<b>Name</b>	<b>Title</b>	<b>Area of Responsibility</b>	<b>Date Signed</b>
Bob Lange	Hydrologist	Air Quality; Surface and Ground Water Quality; Floodplains, Hydrology, and Water Rights; Soils	3/11/2014
Heather Woodruff	Rangeland Management Specialist/Acting Ecologist	Areas of Critical Environmental Concern; Special Status Plant Species	2/24/2014
Heather Woodruff	Rangeland Management Specialist	Forest Management	3/10/2014
Michael Selle	Archaeologist	Cultural Resources; Native American Religious Concerns; Paleontological Resources	3/7/2014
Mary Taylor	Rangeland Management Specialist	Invasive, Non-Native Species; Vegetation; Rangeland Management	2/24/2014
Lisa Belmonte	Wildlife Biologist	Migratory Birds; Special Status Animal Species; Terrestrial and Aquatic Wildlife; Wetlands and Riparian Zones	3/6/2014
Aaron Grimes	Outdoor Recreation Planner	Wilderness; Visual Resources; Access and Transportation; Recreation,	3/4/2014
Kyle Frary	Fire Management Specialist	Fire Management	3/6/2014
Paul Daggett	Mining Engineer	Geology and Minerals	3/6/2014
Stacey Burke	Realty Specialist	Realty	2/20/2014
Melissa J. Kindall	Range Technician	Wild Horse Management	2/20/2014
Brett Smithers	Natural Resource Specialist	Project Lead	3/27/2014
Heather Sauls	Planning & Environmental Coordinator	NEPA Compliance	4/3/2014

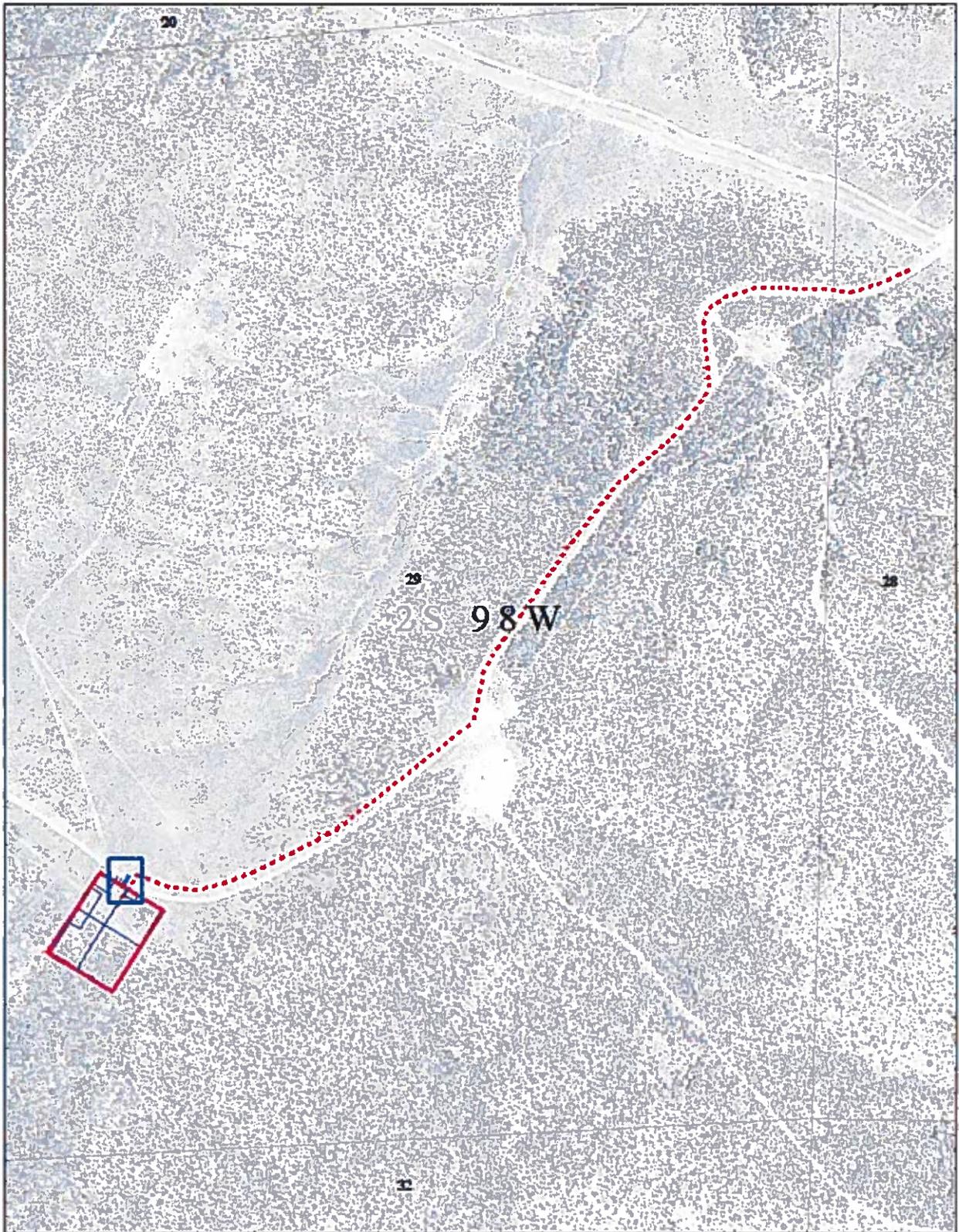
**ATTACHMENTS:**

**Figure 1.** Proposed geographic location for the RG 24-29-298 well pad and access corridor.

**Figure 2.** Existing disturbance features within the project area.

**Appendix A:** Proposed Surface Use Plan of Operations for the RG 24-29-298 well pad.





**Figure 2.** The image above illustrates the proposed geographic location for the RG 24-29-298 well pad and the associated road and pipeline corridors. The proposed buried pipeline is symbolized as a blue line within the blue box, and the proposed surface line is symbolized as a red dotted line.

## **Appendix A:**

**Proposed Surface Use Plan of Operations for the RG 24-29-298 well pad**



**WPX Energy**

1058 County Road 215  
 P.O. Box 370  
 Parachute, Colorado 81635  
 (970) 285-9377

**SURFACE USE PLAN OF OPERATIONS (SUPO)**

**RG 24-29-298**

Proposed rig on date 3/1/14 - proposed rig off date 3/30/14 - proposed construction date 9/1/13  
 Proposed completions complete date 5/1/14 – proposed interim reclamation start date 11/1/14

**Revised 7/26/2013**

Included with this SUPO: Application Fees/APDs / Survey Plats/Plan of Development (POD) map  
 cc: WPX Energy Project File

**Proposed Action**

WPX Energy is proposing to drill 2 Federal wells on a new pad on Federal surface. APDs for the following bolded wells located in the table below are being submitted at this time.

**Well Numbers:**

<b>RG 24-29-298</b>	<b>RG 421-32-298</b>

**Surface Use Plan of Operations**

**1. Existing Roads**

- A. **Legible Map that shows the well site & access route** – See Plat #5 (Access Road Map).
- B. **Plan for improvement and/or maintenance of existing roads** - All non-county roads used to access the wells will be maintained in their current condition or better than before operations began. WPX Energy works in cooperation with the county and other operators regarding any maintenance along county roads with due diligence on dust control and any other maintenance required to access drilling pads. Water application may be implemented if necessary to minimize the amount of fugitive dust.

The Operator will be responsible for continuous inspection and maintenance of the access road. The Operator will conform to a schedule of preventive maintenance, which at a minimum, provides for the following corrective measures on a biannual basis. (Problem areas will be corrected as needed.)

- 1. Road surface grading.

2. Relief ditch, culvert cleaning and cattle guard cleaning.
3. Erosion control measures for cut and fill slopes and all other disturbed areas.
4. Road closures in periods of excessive soil moisture to prevent rutting caused by vehicular traffic.
5. Road and slope stabilization measures as required. The road shall be maintained to the standards required for the construction of the road until final abandonment and rehabilitation takes place.

## 2. *New or Reconstructed Access Roads*

- A. **Proposed Access Route shown on a Map:** Access to pad will be from an existing non-county road. Plat 5D: Reference Area Map and Plat 6: Location
- B. **Legible Map that identifies all permanent & temporary access roads proposed to be constructed:** See Plat 2 (Construction Layout), Plat 5D (Reference Area Map)
- C. **All existing and proposed road structures (culverts, bridges, low-water crossings, etc.) shown on a Map and/or Well Plat:** An 18" culvert will be placed at the entrance to the pad. See Plan of Development Map (POD Map) for existing structures.
- D. **Road (re)construction methods would include:**

### Road information:

- The recommended 90 degree safety & visibility with 100 ft width at intersection will be followed.
- Road Length – From county road to pad approximately 5,700 feet. 40 feet of which will be new construction.
- Road Width (construction row) – The 35 feet of new construction will require 30 feet of construction width.
- Road width (travel width) – 25'
- Maximum grade – 2%.
- Crown design, or In-slope/Out-slop design (Diagram and/or Narrative) - State and County 2% crown design will be met.
- Drainage and ditch design (Stormwater Mgmt BMP's, On-site and off-site Erosion Control) - Drainage and ditch designs are modeled at 2ft wide by 6 in deep. Refer to Plat 5E BMP map and Plan of Development (POD) Map in APD packages. Onsite and offsite erosion control, re-vegetation of disturbed areas and source and storage of topsoil BMP's will be installed prior to, during and immediately following construction as practicable with consideration given to safety, access, and ground conditions at the time of construction. Due to the nature of the topography at various sites, any number of BMP combinations may be utilized at any phase of the project. Constant efforts will be employed to limit the extent of vegetative disturbance at the time of soil exposure during all construction activities and structural BMP implementation.
- Re-vegetation of Disturbed Areas – see above bullet.
- Location/Size of road structures (culverts, etc) - One 18" culvert will be placed at the entrance to the pad.
- Fence cuts, cattle-guards and/or turnouts – An existing fence will be cut to build the pad but then placed back but around the interim reclaimed portion of the pad.
- Major cuts and fills (>5ft) – A cut of 6.3' is on the western edge on center line and a fill of 13.2' is on the south western corner.
- Storage of topsoil – see sixth bullet as well as road interim reclamation below.
- Type of surfacing materials that will be used (if required) – will be gravel road base.

**Road interim reclamation** – Standard road interim reclamation would be to windrow topsoil either parallel to the road or along the low side of the road. Road construction is approximately two weeks. The topsoil would then be brought back up against the slope and then dressed/seeded. Issues found during our annual noxious weed monitoring spray program will be addressed with a site specific treatment.

**Road final reclamation** - The long term objective is to establish a self-perpetuating plant community that would be compatible and capable of supporting the pre-disturbance land use. The rate of application of

the seed mix is listed in pounds of pure live seed (PLS)/acre. The seed will be certified and there will be no primary or secondary noxious weeds in the seed mixture. The operator shall notify the Authorized Officer 24 hours prior to seeding and shall provide evidence of certification of the above seed mix to the Authorized Officer.

All compacted portions of the pad, road, and pipeline route will be ripped to a depth of 18 inches unless located in solid rock. Prior to seeding, stockpiled topsoil (stripped surface material) will be spread to a uniform depth that will allow the establishment of desirable vegetation. All unused disturbed areas will be seeded within appropriate seeding windows and acceptable BLM timeframes unless a change is requested by the operator and approved by the Authorized Officer. If the seed bed has begun to crust over or seal, the seed bed will be prepared by disking or some other mechanical means sufficient to allow penetration of the seed into the soil. In addition, the broadcast seed should be covered by using a harrow, drag bar, or chain.

If off-site construction materials are needed, they will be purchased from a supplier having a permitted source of the materials, and WPX Energy will provide to BLM the quarter-quarter, Section, Township and Range location information of the source of these materials, as well as the type of materials used.

Please refer to section 1 (Existing Roads) for maintenance plans and conformance standards.

### **3. Location of Existing Wells**

RG 24-29-298 One Mile Radius for identification of all known wells (regardless of well status) within a one-mile radius of RG 24-29-298. (See Plat 5B)

### **4. Location of Existing and/or Proposed Production Facilities**

**A. Map or Diagram of all anticipated production facilities and lines likely to be installed if the well is a producer:** See Plat 2: Production Equipment Detail Map at the end of the packet.

**B. Map must identify and differentiate b/t which lines are existing and those that are proposed** See Plan of Development Map which differentiates between existing and proposed lines. A new 8" gas line will be installed to run across the road and tie into the existing Williams 10" line. The approximate total length of the route will be 60 feet. The gas line will be authorized to Bargath, a 3<sup>rd</sup> party gathering company. The width of the ROW requested is 60' with 40' being permanent. In addition to the pipeline ROW requested, WPX Energy requests authorization to allow Bargath to use the Govt 29-3 well pad as a staging area during construction of the gas line associated with the RG 24-29-298 pad. In preparation for pipeline construction, two track hoes and one bulldozer will be placed on location and will be immediately moved to the pipeline ROW, where they will be kept for the remainder of construction. Gas pipeline and fittings will be stored on the Govt 29-3 wellpad for staging purposes. No additional surface disturbance would be needed.

### **5. Location and Types of Water Supply**

#### **Drilling**

For drilling fresh water will be pumped under valid existing permits and transported by truck over privately owned and county roads from one of several sources: 1) surface water at the Mautz Ranch in SWNE19-2S-98W utilizing County Roads 86, 83, 31 and 24, and BLM road, 2) surface water at Mantle's Ranch in NWSE 26-2S-97W utilizing County Roads 85, 86, 83, 31 and 24, and BLM road, and 3) surface water at Mantle's Ranch in NWNW 33-1S-97W utilizing Rio Blanco County #5, and County Roads 24, 83, 31 and BLM road.

For information purposes, typical *estimated* fresh water volumes needed for drilling operations would be approximately 8000 bbls. *Estimated* water volumes needed for dust control as needed during time of drilling and all other operational phases, construction in this case, would be approximately 5000 bbls. A total estimated amount of fresh water to be used is 13,000 bbls.

To protect the water quality of our primary two water source locations Black Sulphur Creek and Piceance Creek all water haul trucks working for WPX have a backflow preventer (check valve) available and in use on all trucks pulling from fresh water sources while servicing the drilling rig. At each specific water source we have constructed a manifold which has a backflow preventer permanently implemented that all trucks must utilize while pulling water from those specific fresh water sources.

Access route is as follows: From the intersection of State Highway 64 and Rio Blanco County Road 5 proceed southerly along County Road 5 ±18.0 miles to the intersection with County Road 26 (Mile Marker 23.4), proceed westerly along County Road 26 ±6.3 miles to an intersection with County Road 85, proceed right in a northerly direction ±1.4 miles to an intersection with a dirt/gravel road, proceed left in a southwesterly direction ±1.1 miles to the RG 24-29-298 drill pad location. (See Plat 5 Access Map.)

Water transportation method will be to truck fresh water.

No new roads would be constructed for the exclusive purpose of transporting water to the site.

### **Completions**

We will frac on pad once the drilling rig leaves. Completions water will be piped through 2- 10" temporary surface water frac lines that will run along the existing gas line ROW and tie into existing 6" water lines, all within existing disturbance.

Completions water will be supplied to the RG 24-29-298 pad from the pending NE Ryan Gulch Water Recycling Pit project which was submitted via SF-299 on 4/2/13, if approved, or from the approved RGU 13-36-198 and RG 12-14-298 large frac tanks.

*Estimated* recycled water volumes required for completion operations (including fracing) would be up to approximately 70,000 bbls per well. Some wells vary due to loss circulation and some do not require this high of volume of fluid. WPX Energy always endeavors to recycle produced water from other wells within pad location area for all completion work.

### **6. Source of Construction Materials**

Surface and subsoil materials within the proposed construction areas will be used. Additional gravel or pit lining material (if required) will be obtained from either Connell Resources gravel pit located in the S ½ of Section 6 T6N-R90W or LaFarge Mamm Creek gravel pit located in the Section 16 T6S-R93W. (10 miles east of I-70 in Rifle).

Additional materials are not needed for construction of this pad.

No construction materials will be taken from Federal lands without prior approval from the appropriate Surface Management Agency.

### **7. Methods for Handling Waste Disposal**

- *Chemical toilets or an enclosed sewer system will be used. Contents will be hauled off by Mountain West and/or Down Valley companies.*
- *All garbage and trash will be stored in a totally enclosed trash container and hauled off by Bolton Construction and ultimately be deposited in an approved sanitary landfill within one week following termination of drilling operations. No garbage or trash will be disposed of in the cuttings trench.*
- *Used oil is put back in its original drum and stored on location within secondary containment. Contracted recyclers would remove the oil from the drums for recycling at an authorized facility.*
- *The well site and access road will be kept free of trash and debris at all times. Wastes meeting criteria established in the U.S. Environmental Protection Agency's "Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations (EPA Publication Number 530-I-01-004) (2002), including drilling cuttings, produced water, frac water, etc. will be managed in accordance with Federal (BLM) and COGCC regulations. Non-E&P wastes will be managed in accordance with EPA and CDPHE regulations. Pit closures will be conducted in accordance with applicable COGCC rules and regulations.*

**Drill cuttings** —Drill cuttings will be stored and buried in the cuttings trench on the pad. The cuttings trench will hold 3,700 cu. yds. of cuttings. We estimate that we will generate 1500-2500 cu. yds. of cuttings. All cuttings are rinsed with recyclable fresh water prior to placing them into the trench. The trench will be constructed to

disallow water input and under no circumstances will it be allowed to leak or be cut to drain. The trench will not be located on a natural drainage. Waste or discharge of any kind will not be allowed to enter any drainage. WPX will extract external liquids throughout the life of the trench. Additional options to prevent water input into the trench would be to construct a berm or ditch around the perimeter as not to allow storm water fluids to drain into the trench. In those cases where emergencies such as weather conditions, safety concerns, or operational constraints exist, cuttings may be temporarily stored at another location in accordance with COGCC waste management and CDPHE storm water regulations. WPX would gain prior approval from BLM before moving cuttings to another location in the event of an emergency. Unlined trenches will be built with compacted sub-soil at the base of the pit. During interim reclamation three foot of clean soil will be put over the pit surface.

- Once the cuttings arrive on surface during the drilling process, they are transported to a drying shaker, which rinses the cuttings w/ recyclable fresh water. The cuttings then fall into a catch bin. At this point, depending on how wet the cuttings are, fill dirt, Cut/Dry, Sawdust, or EcoSponge™ or other organics are mixed in to begin the drying process.
- Trench to be constructed in 100% cut.
- Bury all cuttings on well pad in trench and cover with spoils from pad construction once the drilling rig departs. Truck traffic would be dramatically reduced. When large stockpiles are ready to go, depending on weather and road condition, loads are transported which averages 15 loads per day with 10 trucks. By burying cuttings it would eliminate trucking for approximately 25 round trips per well from the roadways.
- All cuttings will be tested prior to burial. Testing results or the COGCC pit closure approval will be submitted to BLM prior to burial. If cuttings do not pass COGCC testing requirements than subsequent remediation will have to take place before burial. The methods and areas that will be needed will be submitted via sundry for prior approval by BLM.
- Allow excess cement from surface casing jobs to be buried in same trench once cement is set.
- No liquid will be buried in any cuttings trenches.
- All permits, sundry's etc to be in place prior to beginning this process.
- Certificate of Disposal obtained from Rio Blanco County for each pad, if county requires.

WPX would resubmit a revised management/disposal plan in the event cuttings exceed Table 910-1 concentration levels and need additional treatment.

**Frac Sand** - Frac sand will be managed in accordance with COGCC regulations. Frac sand is managed on the pad surface within the pad berm perimeter. The volume of frac sand that comes back during flowback operations is unknown until the actual operations occur. The location of this management area is usually adjacent to the cuttings trench but can depend on equipment on pad, weather conditions, and travel paths that need to be kept open. COGCC does not require a liner to be placed under the frac sand. Any frac sand that cannot be safely contained on the pad surface, within bermed perimeter, will be hauled off to one of the approved 3<sup>rd</sup> party disposal sites listed in #4 below. Frac sand will be blended with clean soil and screened for total petroleum hydrocarbon to ensure compliance with the COGCC Table 910-1 standards before including in the re-contouring of the pad.

**Disposal of drilling fluids** - *Drilling fluids will be stored in tanks on location. The tanks and drilling fluids are hauled off of location once drilling is complete. Drilling fluids are reused between rigs, but, if the fluids have elevated Chlorides, high solids or not recyclable, the fluids will be hauled to the Parachute Centralized E&P Waste Facility. Ultimately, the solids and dewatered water generated at this dewatering plant are hauled to an approved disposal facilities that are permitted to accept soils with hydrocarbon contaminants. The dewatered water is hauled off by a third party contractor, RNI. The dewatered solids are either hauled to the pad at which they originated from (if there is room in the cuttings trench) and tested with the*

contents of the trench to ensure COGCC Table 910-1 standards are met before burial, the Wray Gulch landfill, or to ECDC Environmental. Please see list of approved 3<sup>rd</sup> party disposal sites in #4 below.

**Disposal of produced oil** - Production fluids (oil and water) are separated through production units (separators). Fluids are then dumped into production tanks from separators using pressure off units and automatic valves. Fluids are monitored and tracked off each individual pad and well. Oil is gauged by traditional tank strapping methods and sold from the tank battery at the pad where the marketer for the oil takes custody of the oil.

**Disposal of produced water** - Production fluids (oil and water) are separated through production units (separators). Fluids are then dumped into production tanks from separators using pressure off units and automatic valves. Tanks will be placed in a lined, steel containment ring and hold 1.5 times the capacity of the largest tank or tanks. Fluids are monitored and tracked off each individual pad and well. Water is also gauged by traditional tank strapping and hauled to numerous points depending on if water is needed for completion operations.

1. Produced water will be pumped via water lines to the large frac tanks (described under the Completions section above) where the fluid can be biocided and filtered prior to pumping through underground water lines to a pad that is in the process of being fraced. Water can also be trucked back out if no lines are present to that pit (this option is secondary as pumping is preferred to reduce truck traffic and costs).
2. Produced water that is not needed for completions will be:
  - a. Injected into one of WPX Energy's salt water injection s (See list of WPX's Class II UIC wells in #4 below) or
  - b. Excess water may be hauled to our approved Parachute Centralized E&P Waste Facility (T6S-R96W-Sec. 36) or Rulison Centralized E&P Waste Facility (T6S-R94W-Sec.20) where it will be further cleaned and recycled for completions or injected into one of WPX approved Class 2 UIC Wells (see list of approved Class II UIC wells in #4 below) or
  - c. Left over water that cannot be injected into WPX Energy owned and operated Class II UIC wells will be hauled to approved third party disposal sites (See List of approved disposal sites in #4 below).
3. Mautz Ranch multi-well pit – This is a central storage area on private property that will allow us to deliver water more efficient and reduce truck traffic to our central locations. SF-299's for pipelines to this facility have been submitted to BLM. Once these are approved and installed, water can then be pumped to and from this site.
4. WPX Energy operates Class II UIC Disposal wells throughout the Piceance Asset to properly manage excess water volumes. The wells are operated within the Guidelines of the State and Federal controlling agencies. Below is a list of current WPX Class II UIC wells\*:

Fed 299-27-5 (Fed surface)	GM 943-1D (private surface)
Fed 299-27-6 (Fed surface)	GM 239-36. (private surface)
Fed 299-26-2 (Fed surface)	
RG 41-16-397 (Fed surface)	
Fed 299-23-2 (Fed surface – pending UIC permit)	
Fed 299-23-3 (Fed surface – pending UIC permit)	
RWF 623-21 (private surface)	
DOE 2-W-29 (Fed surface – pending UIC permit)	
RWF 434-21 (private surface)	
RMV 215-21 (private surface)	
KP 9-12D (private surface)	
GM 14-36 (private surface)	
GM 523-36 (private surface)	
GM 923-1D (private surface)	
GM 931-1D (private surface)	

\*Please note that all approved UIC permits are on file in the WRVFO.

Below is a list of current approved 3<sup>rd</sup> party disposal sites: Solids:  
ECDC Environmental (East Carbon, UT)  
Wray Gulch Landfill

Liquids:  
RNI Rangely Disposal  
RNI Piceance Creek Disposal  
Danish Flats Environmental (Cisco, UT)  
Green River (Green River, UT)  
Westwater Farms (Westwater, UT)  
Great Divide (Maybell, CO)

*Secondary containment(s) will be installed/constructed, inspected and maintained in accordance with the Environmental Protection Agency's Spill Prevention, Control and Countermeasure (SPCC) regulation (40 CFR 112.7 5c & Surface Operating Standard for Oil and Gas Exploration and Development, Fourth Edition – Revised 2007).*

## 8. Ancillary Facilities

The ancillary recycling point for drilling, completions and production is the existing dewatering plant set up at the existing Parachute Centralized E&P Waste Facility (T6S-R96W-Sec. 36) for the recycling of drilling, completions and production fluids. Large frac tanks for storage of produced/completions water are approved and set on the RGU 31-24,198, RGU 13-24-198, RGU 13-36-198, and RG 12-14-298 pads. In the event that the proposed NE Ryan Gulch Water Recycling Pit is approved before this location is ready to drill we would use the pit in lieu of the large tanks. Also, Class II UIC wells and approved 3<sup>rd</sup> party disposal locations are listed in section 7 under #4. See Ancillary Facilities Map 5F.

## 9. Wellsite Layout

The below plats will be submitted in the site specific APD packages.

Plat #1 of the attached APD(s) for the Well Location, (surveyed, designed, and certified by license surveyor/engineer)

Plat #2 of the attached APD(s) for the Construction Layout. (surveyed, designed, and certified by license surveyor/engineer)

Plat #3 of the attached APD(s) for the Construction Layout Cross Sections, (surveyed, designed, and certified by license surveyor/engineer)

Plat #4 of the attached APD(s) for the Drill Rig Layout.

Plat #5 of the attached APD(s) for Access Road Map (with existing access – no new access is needed.)

Plat #5B of the attached APD(s) for One Mile Radius

Plat #5C of the attached APD(s) for Hydrology Map

Plat #5D of the attached APD(s) for Reference Area Map

Plat #5E of the attached APD(s) for Storm water BMP Map

Plat #5F of the attached APD(s) for Ancillary Facilities Map

Plat #6 of the attached APD(s) for the Location (Current Footages).

Plat #7 of the attached APD(s) for the Reclaimed Pad & Production Equipment. – contains disturbance area acreage.

Production Equipment Detail

Plan of Development (POD) Map

Location of Existing Wells - COGCC Map

WPX Energy GIS department will send Richard Brooks/Meeker BLM shapefiles in conjunction with submission of APD package(s) to meet the geospatial requirements.

The certified plats have been submitted at a 1"=80" scale, per a previous agreement with the WRFO to fit maps on 8.5x11' paper as long as they are legible. However, in the future, maps will be submitted at no less than 1"=50' if necessary to make them legible.

Pad (including dimension) - Pad: 350'x450', without stormwater features. Production pad: Separators 30'x60' and Tank area 60'x80'. The total disturbance (which is within existing disturbance) is ±6.27 acres which includes the stormwater BMPs.

Pad cuts & fills - Biggest cut is 6.3' and biggest fill 13.2'.

Reserve pit location - NA

Access road entry points and approximate location with respect to topographic features - Access road comes in over minor cut from south end of pad. See Plat 5 for location map and directions-attached.

Proposed drill rig w/anchor locations - See Plat 4: Drilling Rig Layout.

Dikes & Ditches constructed (Stormwater Mgmt BMPs). Diagram must show maximum extent of disturbance - See Plat 5E for Stormwater BMPs. The acreage of disturbance shown in the disturbance table below (±6.27 acres) includes stormwater BMPs.

Topsoil and spoils material stockpile locations; Include method of topsoil stabilization - Topsoil stockpile is planned to be on eastern-southeastern side of pad. (See Plat 2)

Cross-section diagrams of drill pad – See Plat 3.

### ***10. Plans for Surface Reclamation***

*The site is anticipated to be active for up to 35 years, meaning final reclamation could occur in the year 2049.*

Reclamation/reseeding will comply with Federal (BLM) and state (COGCC) regulations. On BLM lands, WPX Energy will comply with seeding requirements as established by the appropriate BLM office.

***Plan for surface reclamation*** - *The long term objective is to establish a self-perpetuating plant community that is compatible with and capable of supporting the pre-disturbance land use.*

#### **Plan addresses Interim Reclamation(during production) –**

*All areas of surface disturbance no longer needed for production would be reclaimed after the permitted wells are drills. Interim reclamation on a pad will be completed 6 months, weather permitting, after the wells are completed on the pad. If the cuttings on the pad do not pass COGCC regulations a sundry will be submitted to BLM with this information and a request to extend the interim reclamation time frame and/or a cuttings treatment plan with an expected date of completion.*

*All permanent above-ground structures not subject to safety considerations will be painted a flat, non-reflective, earth-tone color to match the standard environment from safety purposes. Immediately upon completion of drilling, the location and surrounding area will be cleared of all remaining debris, materials, trash and junk not required for production, and hauled to the nearest legal landfill. Any significant areas of disturbance caused by temporary surface lines that are identified by BLM and/or landowner at time of removal will have vegetation or soils reclaimed to pre-disturbance conditions.*

**Diagram of Interim Reclamation Plans** – *Please see plat 7.*

**Configuration of Reshaped Topography** - The slopes of the pad would be re-contoured to fit the natural topography, but a working area would be maintained around each well head and production equipment.

**Drainage Systems (Stormwater Mgt BMPs)** – No storm water BMPs are proposed at this time for the interim reclaimed pad. However, WPX will remain in compliance with CDPHE regulations and once re-contouring is complete and storm water management BMPs are found to be needed, an as-built drawing showing these BMPs will be available upon request.

**Proposals for Pit/Sump Closures (if applicable)** - The process of closing the cuttings trench will begin within six months of all drilled wells on the pad being completed. The trench will be closed in time to complete interim reclamation by the 6 mos. timeframe (following completions) required by the Onshore Order.. If the cuttings do not pass COGCC Table 910-1 specifications then the trench will remain open until the cuttings do pass. If the interim reclamation completion timeframe needs to be extended due to the cuttings not passing Table 910-1 specs then prior approval will be obtained from BLM before extending the interim reclamation completion date.

**Redistribution of Topsoil** - After the well pad has been constructed, drilling and completions are completed, with production facilities in operation, the site will be graded to reduce cut and fill slopes to minimize the overall size of the well pad. Three foot of clean soil (non-cuttings soil) will be put over the pit surface in accordance with COGCC regulations. Where practicable, the topsoil stockpile will be spread onto the re-contoured surface. Any remaining topsoil will be seeded to maintain stabilization and continued nutrient cycling. The well pad will be maintained as necessary to assist in site stabilization during interim reclamation. Slopes around the production facilities, which are unable to be re-contoured for interim reclamation will continue to be stabilized with structural BMPs, and will be seeded as grade allows. All compacted portions of the pad, road, and pipeline route not needed for production will be ripped to a depth of 18 inches unless in solid rock. Prior to seeding, stockpiled topsoil (stripped surface material) will be spread to a uniform depth that will allow the establishment of desirable vegetation. Topsoil would be uniformly re-distributed over all disturbed areas prior to seeding.

**Segregation of spoil materials (stockpiles)** - Different soil horizons will be segregated. The topsoil horizon or the top six (6) inches, whichever is deeper, will be separated and stored in locations noted on construction drawings. Other soil horizons will be segregated based upon noted changes in physical characteristics such as organic content, color, texture, density or consistency. This practice will ensure that the soil is applied to the appropriate horizon from which it was taken from initially.

**Soil Treatment** - Soil samples will be collected and analyzed to determine the need to add amendments. Amendments will be utilized, as applicable, upon receiving prior approval from the BLM.

**Seeding/Re-vegetation** - Reclamation/reseeding will comply with Federal (BLM) and state (COGCC) regulations. On BLM lands, WPX Energy will comply with seeding requirements as established by the appropriate BLM office. The topsoil stockpile will be stabilized with a BLM approved seed mix, until it is redistributed for interim reclamation. All unused disturbed areas will be seeded within 24 hours after seed bed preparation unless a change is requested by the operator and approved by the Authorized Officer. If the seed bed has begun to crust over or seal at the time the soil is to be redistributed for interim reclamation, the seed bed will be prepared by disking or some other mechanical means sufficient to allow penetration of the seed into the soil. In addition, the broadcast seed should be covered by using a harrow, drag bar, or chain. The rate of application of the seed mix is listed in pounds of pure live seed (PLS)/acre. The seed will be certified and there will be no primary or secondary noxious weeds in the seed mixture. The operator shall notify the Authorized Officer 24 hours prior to seeding and shall provide evidence of certification of the above seed mix to the Authorized Officer. If at all possible topsoil will not be allowed to crust over.

**Weed Control** - Noxious weeds which may be introduced due to soil disturbance and reclamation will be controlled by methods to be approved by the Authorized Officer. The Pesticide Use Permit shall be on record with the BLM for treatment of noxious weeds.

**Practices necessary to reclaim all disturbed surfaces, including access roads & pipelines** - Topsoil would be brought back against the slope and dressed/seeded. Issues found during our annual noxious weed monitoring spray program will be addressed with a site specific treatment. All pit liners are recovered and turned over to a third party contractor for recycling. Testing below all pit liners and any material utilized for backfilling purposes for reserve pits will be below COGCC table 910-1 standards prior to proceeding with any reclamation work.

**Plan addresses Final Reclamation (Abandonment)** –

Final reclamation will include the restoration of functional pre-disturbance hydrology and well as a stable and self-sustaining plant community consistent with the surrounding landscape. Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR 3162.6. The marker will be constructed after contouring. The top of the marker will be closed or capped and the following minimum information will be permanently placed on the marker with a plate, cap or beaded-on with a welding torch: "Fed" or "Ind", as applicable; "well number, location by quarter, quarter section, township and range"; and "lease number". Unless an agreement is made with the landowner to keep the road and/or pad in the place, the disturbed areas surrounding the well location, including the access road and pipeline will be completely reclaimed to pre-disturbance conditions and to closely resemble features of the surrounding natural landscape.

**Configuration of Reshaped Topography** - After all wells have been plugged and abandoned, and production facilities are removed, the well pad will be graded to restore pre-disturbance contours. Final grading of back-filled and cut slopes will be done to prevent erosion and encourage establishment of vegetation. Existing drainages will be re-established. The Construction layout cross section supplied in site specific APDs will, in reference to the proposed cut and fill of the pad, be restored to pre-disturbance conditions at time of final reclamation.

**Drainage Systems (Stormwater Mgt BMPs)** - A site specific Hydrology map will be supplied with each APD to reference existing pre-disturbance hydrology. The pad would be restored to pre-disturbance conditions at the time of final reclamation. Existing drainage would be re-established. Storm water inspections will continue until the site has reached a stabilization level of 70% of pre-disturbance conditions. Once the site reached final stabilization, a post construction storm water management program will be implemented per COGCC Final Amended Rules (December 17, 2008), Rule 1002 (f)(3).

**Redistribution of Topsoil** - Topsoil would be uniformly re-distributed over all disturbed areas prior to seeding. All compacted portions of the pad, road, and pipeline route will be ripped to a depth of 18 inches unless in solid rock. Prior to seeding, stockpiled topsoil (stripped surface material) will be spread to a uniform depth that will allow the establishment of desirable vegetation. Topsoil would be uniformly re-distributed over all disturbed areas prior to seeding.

**Segregation of spoil materials (stockpiles)** - Different soil horizons will be segregated. The topsoil horizon or the top six (6) inches, whichever is deeper, will be separated and stored in locations noted on construction drawings. Other soil horizons will be segregated based upon noted changes in physical characteristics such as organic content, color, texture, density or consistency.

**Soil Treatment** - Soil samples will be collected and analyzed to determine the need to add amendments. Amendments will be utilized, as applicable, upon receiving prior approval from the BLM.

**Seeding/Re-vegetation** - The long term objective is to establish a self-perpetuating plant community that is compatible with and capable of supporting the pre-disturbance land use. The pad will be re-seeded

upon completed grading activities with a BLM-approved seed mix and rate of application. The seed will be certified and there will be no primary or secondary noxious weeds in the seed mixture.

**Weed Control** - Areas being reclaimed will be fenced to exclude livestock for the first two growing season or until the seeded species have established. The type of fencing will be approved by the Authorized Officer. Noxious weeds which may be introduced due to soil disturbance and reclamation will be treated by methods to be approved by the Authorized Officer. The Pesticide Use Permit shall be on record with the BLM for treatment of noxious weeds.

**Practices necessary to reclaim all disturbed surfaces, including access roads & pipelines** - All areas of surface disturbance would be reclaimed after the permitted wells are drills. The time period between commencement of drilling activities and well abandonment is anticipated to be ~35 years. If it is determined by the Authorized Officer that the above reclamation standards are not being met, the operator will be required to submit a plan to correct the problem. Approval of the plan may require special reclamation practices such as mulching, the method and time of planting, the use of different plant species, soil analysis to determine the need for fertilizer, fertilizing, seed-bed preparation, contour furrowing, watering, terracing, water barring, and the replacement of topsoil.

### 11. *Surface Ownership:*

*Bureau of Land Management. White River Field Office. 220 E. Market St. Meeker, Colorado 81641 (970) 878-3800.*

Any lands crossed by access roads will be public lands.

Landowner agreement form (if applicable) – NA

### 12. *Other Information*

#### Environmental Considerations

**AIR QUALITY**- All equipment and infrastructure will comply with COGCC and CDPHE air quality regulations for an APEN or permitting. WPX Energy takes air emissions, including VOC emissions, very seriously and especially when WPX Energy' operations are within ¼ mile (1320 feet) of a residence or any public structure or dwelling.

Starting in 2009 WPX Energy makes an extra effort not to locate open pits of any kind within ¼ mile of a resident's home and/or public dwellings unless the pit is benign in nature and will not cause any nuisance or health impacts. Furthermore, it is WPX Energy practice and policy to control VOC emissions at a minimum of 95% control efficiency once production on a pad commences and has the potential to cause health impacts at any distance, or odor nuisance at a distance of up to ¼ mile as suggested by the COGCC Odor & nuisance Rules.

WPX Energy adheres to complete compliance with federal and state air quality regulations as prescribed by the Clean Air Act and CDPHE Regulations Nos. 1, 2, 3 & 7. WPX Energy is proactive in its permitting and compliance demonstrations by employing Emission Control Devices (ECD) where it is warranted and closely monitors the operation of these devices. WPX Energy works closely with the CDPHE Air Pollution Control Division to obtain permits and make any air emission controls installed enforceable through compliance demonstrations and ensure that they meet the highest achievable efficiency and standards.

**CHEMICAL MANAGEMENT**- All chemical management will comply with COGCC, CDPHE and SARA Title III reporting requirements, including MSDS sheets for all chemicals used in WPX Energy' operations.

**GROUNDWATER**- Drilling plans will comply with COGCC, CDPHE, and local government agency ground water protection regulations.

**MINERALS- STATE AND COUNTY**- APDs will be submitted to the COGCC for State Approval in accordance with COGCC Title 34 regulations. Any SUP or other county requirements will be complied with.

**NOISE-** Noise thresholds as established by the COGCC will be complied with in accordance with State Title 34 regulations.

**SPILLS-** All spills will be managed in accordance with Federal, State and local requirements, including notification, reporting, response and remediation actions.

**WATER – GENERAL / NPDES / WATER RIGHTS-**Any NPDES discharge permits (if needed) and water rights obligations will be complied with under state COGCC, CDPHE and SEO regulations.

**WATER – 404 LOCATIONS -** If locations appear to fall under COE jurisdiction and qualify for Nationwide Permits they will be tracked and comply with NWP terms and conditions. Preconstruction notification to the COE in accordance with 33 CFR 330 will be meet when required

**WATER – SPCC-** All SPCC locations with comply with EPA, COGCC and CDPHE requirements for plans and reporting in accordance with 40 CFR 112.

### 13. Representative (Lessee's or Operator's) & Certification

*The operator has certified that the statements made in the APD package are true and correct, the work associated the proposed operations will be performed in conformity with the APD package, and that they possess full knowledge of state and Federal laws applicable to this operation. The operator certifies that they are responsible for operations conducted under this application.*

#### RG 24-29-298 Leases COC 001491

	Disturbance in acres during Construction Phase	Disturbance in acres during Production Phase	Disturbance in acres following Abandonment	COMMENTS
40ft access road	0.03	0.02	0.0	Access to pad is right off non-county road
60ft pipeline corridor	0.08	0.08	0.0	ROW width is 60'
well pad	6.27	1.31	0.0	
Total	6.38	1.41	0.0	

<b>Disturbance Categories</b>		<b>Acres</b>
Total Existing/MDP Disturbed Acres		15.13
Total Lease Acres		599
Total Disturbed Acres on Lease as % of Total Lease Acreage		2.53%

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

**Finding of No Significant Impact (FONSI)  
DOI-BLM-CO-N05-2014-0047-EA**

**BACKGROUND**

WPX Energy has requested authorization to construct the RG 24-29-298 well pad and drill three natural gas wells (RG 24-29-298, RG 713-29-298, and RG 421-32-298) on this location. The applicant also requests authorization to install approximately 60 feet of gathering line and 40 feet of access road to access the location. In addition, the applicant would install approximately 5,306 feet of temporary surface pipeline for completion operations. If approved and implemented, this action will result in approximately 6.38 acres of surface disturbance.

**FINDING OF NO SIGNIFICANT IMPACT**

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

**Context**

The project is a site-specific action directly involving BLM administered public lands that do not in and of itself have international, national, regional, or state-wide importance. The lease area is relatively undeveloped so impacts to soil and other biological resources would be considered local, low intensity, and of short duration. Road density within 5 miles of the proposed well pad equals approximately 2.3 miles of road corridor per square mile. Producing well density within 5 miles of the proposed well pad location equals approximately 0.8 producing wells per square mile.

**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 provide beneficial diversity to the currently existing plant community. 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 no eligible cultural resources in the proposed areas of disturbance.

**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 analysis of the Proposed Action.

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

The Proposed Action neither establishes a precedent for future BLM actions with significant effects nor represents a decision in principle about a future consideration. Similar proposals to drill have been evaluated and approved, so authorization to drill the proposed wells 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 inventory identified no new cultural resources in the proposed project area. Mitigation for cultural resources that may be exposed due to natural weathering has been provided in the Decision Record.

**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 perceived impacts associated with it violate any laws or requirements imposed for the protection of the environment.

**SIGNATURE OF AUTHORIZED OFFICIAL:**



Field Manager

**DATE SIGNED:**

05/07/2014

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

**DECISION RECORD**

**PROJECT NAME:** WPX's proposed RG 24-29-298 well pad and associated wells (3) in the Black Sulfur Creek watershed

**ENVIRONMENTAL ASSESSMENT NUMBER:** DOI-BLM-CO-N05-2014-0047-EA

**DECISION:** It is my decision to implement the Proposed Action, as mitigated in DOI-BLM-CO-N05-2014-0047-EA authorizing the construction, operation, and maintenance of the RG 24-29-298 well pad and associated natural gas wells (RG 24-29-298, RG 713-29-298, and RG 421-32-298), and pipeline and road infrastructure. Approximately 60 feet of gathering line and 40 feet of access road would be constructed. In addition, the applicant would install approximately 5,306 feet of temporary surface pipeline for completion operations.

**MITIGATION:**

1. The operator 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. All access routes and pipeline ROWs will be treated with water and/or a BLM-approved chemical dust suppressant during construction and drilling activities so that there is not a visible dust plume behind vehicles. All vehicles will abide by company or public speed restrictions during all activities. If water is used as a dust suppressant, there should be no traces of oil or solvents in the water and it should be properly permitted for this use by the State of Colorado. Only water needed for abating dust should be applied; dust abatement should not be used as a water disposal option under any circumstances.
3. The operator will surface BLM Road 1019 from the Junction of CR 85 to the pad site with at least 6 inches of roadbase and/or gravel to achieve an all-weather travel surface. This road base will be maintained through the life of the project. Road surfacing on this stretch of road will help maintain the drainage features of the travel surface and make dust mitigation more effective.
4. In order to protect public land health standards for soils, erosion features such as rilling, gullyng, piping and mass wasting on the surface disturbance or adjacent to the surface disturbance as a result of this action will be addressed immediately after observation by contacting the AO and by submitting a plan to assure successful soil stabilization with BMPs to address erosion problems.

5. To protect surface waters below the project area, the operator will keep road inlet and outlet ditches, sediment retention basins, and culverts free of obstructions, particularly before and during spring run-off and summer convective storms. Provide adequate drainage spacing to avoid accumulation of water in ditches or on road surfaces.
6. To reduce erosion adjacent to roads and protect water quality in downstream public lands by maintaining the drainage features of the access roads, access roads will be surfaced with six inches of road base and/or gravel as described in the soils section. Maintenance will include restoring the travel surface shape, road surfacing to maintaining an effective all-weather surface during drilling and production of the wells.
7. 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.
8. For interim reclamation the BLM recommends Seed Mix #2 outlined in Table 7. It is recommended that seeding occur between September 1 and March 15. If an alternate date of seeding is requested, contact the designated Natural Resource Specialist prior to seeding for approval. Drill seeding is the preferred method of application and drill seeding depth must be no greater than ½ inch. If drill seeding cannot be accomplished, seed should be broadcast at double the rate used for drill seeding, and harrowed into the soil. Final reclamation will be completed using the reclamation practices and seed mixes recommended at that time.

**Table 7. Seed Mix #2 for Interim Reclamation of the RG 24-29-298 pad.**

<b>Cultivar</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Application Rate (lbs PLS/acre)</b>
Arriba	Western Wheatgrass	<i>Pascopyrum smithii</i>	4
Rimrock	Indian Ricegrass	<i>Achnatherum hymenoides</i>	3.5
Whitmar	Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>inermis</i>	4
Lodorm	Green Needlegrass	<i>Nassella viridula</i>	2.5
Timp	Northern Sweetvetch	<i>Hedysarum boreale</i>	3
	Needle and Thread	<i>Hesperostipa comata</i> ssp. <i>comata</i>	3

9. In the SUP where it addresses ripping compacted soils, ensure that ripping is completed before spreading topsoil. If topsoil will be stored for more than one year and other resource values can be accommodated, topsoil should be stored in piles with a depth of two feet or less to help retain soil viability.
10. To reduce erosion and reduce the risk of weed establishment, interim reclamation will be initiated when either there are no drilling activities expected on the pad for the next six months or there has been no activity on the pad within the last six months, regardless of whether or not there are outstanding approved APDs.

11. The maximum extent of disturbance for the well pad (e.g., the well pad footprint) will be fenced. Fencing should remain in place through successful interim reclamation and again through successful final reclamation to promote re-vegetation and reduce weeds. Fences, cattleguards, and gates (all built to BLM specification per BLM manual H-1741-1) will be installed, maintained, and removed by the operator upon approval by the AO. The fence around the pad must also have a wire gate installed adjacent to the cattleguard or at another appropriate location to be used in the case of livestock becoming entrapped inside the pad area. As part of final abandonment the fence around this pad will be reconstructed on the pre-disturbance fence alignment and all unneeded fence materials will be removed.
12. All seed tags will be submitted via Sundry Notice (SN) to the designated Natural Resource Specialist within 14 calendar days from the time the seeding activities have ended. The SN will include the purpose of the seeding activity (i.e., seeding well pad, cut and fill slopes, seeding pipeline corridor, etc.). In addition, the SN will include the well or well pad number associated with the seeding activity, if applicable, the name of the contractor that performed the work, his/her phone number, the method used to apply the seed (e.g., broadcast, hydro-seeded, drilled), whether the seeding activity represents interim or final reclamation, the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied.
13. Each year by January 1<sup>st</sup> WPX will submit a Reclamation Status Report to the WRFO that includes the well number, API number, legal description, UTM coordinates, project description (e.g., well pad, pipeline, etc.), reclamation status (e.g., interim or final), whether the well pad and/or pipeline has been re-vegetated and/or re-contoured, date seeded, photos of the reclaimed site, acres seeded, seeding method (e.g., broadcast, drilled, hydro-seeded, etc.), and contact information for the person responsible for developing the report. The report will include maps showing each point (i.e., well pad), polygon, and/or polyline (i.e., pipeline) feature that was included in the report. The data must be submitted in UTM Zone 13N, NAD 83, in units of meters. In addition, scanned copies of seed tags that accompanied the seed bags will be included with the report. Internal and external review of the WRFO Reclamation Status Report and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report.
14. The operator shall meet the following reclamation success criteria, and these standards apply to both interim and final reclamation:
  - a) Self-sustaining desirable vegetative groundcover consistent with the site DPC (as defined by the range site, WRFO AIM protocol site data (BLM TN 440), ecological site or an associated approved reference site) is adequately established as described below on disturbed surfaces to stabilize soils through the life of the project.
  - b) Vegetation with eighty percent similarity of desired foliar cover, bare ground, and shrub and/or forb density in relation to the identified DPC. Vegetative cover values for woodland or shrubland sites are based on the capability of those sites in an herbaceous state.
  - c) The resulting plant community must have composition of at least five desirable plant species, and no one species may exceed 70 percent relative cover to ensure

that site species diversity is achieved. Desirable species may include native species from the surrounding site, species listed in the range/ecological site description, AIM data, reference site, or species from the BLM approved seed mix. If non-prescribed or unauthorized plant species (e.g., yellow sweetclover, *Melilotus officinalis*) appear in the reclamation site BLM may require their removal.

- d) Bare ground does not exceed the AIM data, range site description or if not described, bare ground will not exceed that of a representative undisturbed DPC meeting the Colorado Public Land Health Standards.
15. Application of herbicides must 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).
  16. A pre-disturbance weed survey must identify and quantify noxious and/or invasive weeds within the areas of direct and indirect use (i.e., within 100 meters of direct use), including access road/pipeline, and other associated surface disturbance. The weed survey report shall be submitted to the designated Natural Resource Specialist prior to initiating surface disturbing activities.
  17. All seed, straw, mulch, or other vegetative material to be used on BLM and split-estate lands will comply with United States Department of Agriculture (USDA) state noxious weed seed requirements and must be certified by a qualified Federal, State, or county office as free of noxious weeds. Any seed lot with test results showing presence of State of Colorado A or B list species will be rejected in its entirety and a new tested lot will be used instead. All areas identified to be disturbed under this proposal will 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 Authorized Officer.
  18. Pesticide Use Proposals (PUPs) must 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. The WRFO recommends that all PUPs be submitted no later than March 1<sup>st</sup> of the year anticipating herbicide application.
  19. Vegetation removal associated with well pad, road and pipeline development will take place outside the migratory bird nesting season of May 15 through July 15.
  20. 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 method 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.

21. The operator 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.
22. 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.
23. 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.
24. 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 or other scientifically important fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
25. 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.
26. 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.

27. Paint and maintain the paint on all permanent above ground structures (on-site for six months or longer) including tanks, associated production equipment, and any piping and valves, Juniper Green according to the BLM Standard Environmental Chart CC-001: June 2008.
28. 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.
29. Where required by law or regulation to develop a plan for the prevention of releases or the recovery of a release of any substance that poses a risk of harm to human health or the environment, provide a current copy of said plan to the BLM WRFO.
30. 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.
31. 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.
32. 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.
33. As a reasonable and prudent lessees/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.
34. When working on lands administered by the BLM WRFO, notify Craig Interagency Dispatch (970-826-5037) in the event of any fire.

- a) The reporting party will inform the dispatch center of fire location, size, status, smoke color, aspect, fuel type, and provide their contact information.
- b) The reporting party, or a representative of, should remain nearby, in a safe location, in order to make contact with incoming fire resources to expedite actions taken towards an appropriate management response.
- c) The applicant and contractors will not engage in any fire suppression activities outside the approved project area. Accidental ignitions caused by welding, cutting, grinding, etc. will be suppressed by the applicant only if employee safety is not endangered and if the fire can be safely contained using hand tools and portable hand pumps. If chemical fire extinguishers are used the applicant must notify incoming fire resources on extinguisher type and the location of use.
- d) Natural ignitions caused by lightning will be managed by Federal fire personnel. The use of heavy equipment for fire suppression is prohibited, unless authorized by the Field Office Manager.

35. In accordance with the 1997 White River RMP/ROD, all trees removed in the process of construction shall be purchased from the BLM. Trees should first be used in reclamation efforts and then any excess material made available for firewood or other uses.
- a. Woody materials required for reclamation shall be removed in whole with limbs intact and shall be stockpiled along the margins of the authorized use area separate from the topsoil piles. Once the disturbance has been recontoured and reseeded, stockpiled woody material shall be scattered across the reclaimed area where the material originated. Redistribution of woody debris will not exceed 20 percent ground cover. Limbed material shall be scattered across reclaimed areas in a manner that avoids the development of a mulch layer that suppresses growth or reproduction of desirable vegetation. Woody material will be distributed in such a way to avoid large concentrations of heavy fuels and to effectively deter vehicle use. Woody materials that are to be stockpiled along margins and not used in the topsoil should not exceed pile dimensions of 8 x 8 x 8 feet. Materials used in the stockpiles should be a variety of diameters, but should be no smaller than 6 inches in diameter. Additionally the piles should be no less than 30 feet apart.
  - b. Trees that must be removed for construction and are not required for reclamation shall be cut down to a stump height of 6 inches or less prior to other heavy equipment operation. These trees shall be cut in four foot lengths (down to 4 inches diameter) and placed in manageable stacks immediately adjacent to a public road to facilitate removal for company use or removal by the public.
36. When constructing the pad, ensure that any reconfiguration of the road will not reduce or prevent surface flow from the roadway from reaching the small pond approximately 100 meters to the north of the pad.
37. Where the main body of the pad will remove a section of the pasture division fence, ensure that the proposed fence that is reconstructed around the pad is constructed to maintain the function of this fence in controlling livestock movement through the area. If construction will occur during the timeframe livestock are in the area a temporary fence will need to be

constructed until the longer-term fence can be built. See Vegetation mitigation for fence construction requirements.

38. The operator must coordinate with the livestock grazing permittee (Mantle Ranch) authorized to graze livestock within the project area a minimum of 72 hours prior to construction activities associated with this permit. Livestock grazing permittee contact information may be found at [www.blm.gov/ras/](http://www.blm.gov/ras/) or by contacting the WRFO Range staff (970-878-3800). The operator will provide the grazing permittee the location, nature, and extent of the anticipated activity being completed.
39. Any range improvement projects such as fences, water developments, cattleguards, gates, or other livestock handling/distribution facilities that are damaged or destroyed either directly or indirectly as a result of implementation of the Proposed Action shall be promptly (at least prior to the livestock grazing permittee's need to utilize the range improvement) be repaired or replaced by the operator to restore it to at least its pre-disturbance functionality. If the operator damages any range improvement project(s) the operator will notify the Authorized Officer through Sundry Notice (Form 3160-5) and identify the actions taken to repair the feature(s).
40. The holder will effectively coordinate with existing ROW holders (Enterprise Gas Processing and Bargath/XTO) prior to construction activity.
41. The holder shall provide the BLM AO with data in a format compatible with the WRFO's ESRI ArcGIS Geographic Information System (GIS) to accurately locate and identify the ROW and all constructed infrastructure, (as-built maps) within 60 days of construction completion. Acceptable data formats are: (1) corrected global positioning system (GPS) files with sub-meter accuracy or better; (2) ESRI shapefiles or geodatabases; or at last resort, (3) AutoCAD .dwg or .dxf files. Option 2 is highly preferred. In ALL cases the data must be submitted in Universal Transverse Mercator (UTM) Zone 13N, NAD 83, in units of meters. Data may be submitted as: (1) an email attachment; or (2) on a standard compact disk (CD) in compressed (WinZip only) or uncompressed format. All data shall include metadata, for each submitted layer, that conforms to the Content Standards for Digital Geospatial Metadata from the Federal Geographic Data Committee standards. Questions should be directed to WRFO BLM GIS staff at (970) 878-3800.
42. Construction activity should take place entirely within the areas authorized in the ROW grants and temporary use permit.
43. At least 90 days prior to termination of the ROW, the holder shall contact the AO to arrange a joint inspection of the ROW. The inspection will result in the development of an acceptable termination and rehabilitation plan submitted by the holder. This plan shall include, but is not limited to, removal of facilities, drainage structures, and surface material (e.g., gravel or concrete), as well as final recontouring, spreading of topsoil, and seeding. The Authorized Officer must approve the plan in writing prior to the holder's commencement of any termination activities.

44. No surface disturbing activities shall take place on the subject right-of-way until the associated APD is approved. The holder will adhere to special stipulations in the Surface Use Program of the approved APD, relevant to any right-of-way facilities.
45. Boundary adjustments in Oil and Gas lease/unit COC68811 shall automatically amend this right-of-way to include that portion of the facility no longer contained within the above described lease/unit COC68811. In the event of an automatic amendment to this right-of-way, the prior on-lease/unit conditions of approval of this facility will not be affected even though they would now apply to facilities outside of the lease/unit as a result of a boundary adjustment. Rental fees, if appropriate shall be recalculated based on the conditions of this grant and the regulations in effect at the time of an automatic amendment.
46. 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-N05-2014-0047-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 1/21/2014. External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register on 3/5/2014.

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

#### **ADMINISTRATIVE REMEDIES**

##### **State Director Review**

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

Appeal

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

SIGNATURE OF AUTHORIZED OFFICIAL:



Field Manager

DATE SIGNED:

05/07/2014