

U.S. Department of the Interior  
Bureau of Land Management  
White River Field Office  
73544 Hwy 64  
Meeker, CO 81641

## ENVIRONMENTAL ASSESSMENT

**NUMBER:** CO-110-2006-233-EA

**CASEFILE/PROJECT NUMBER** (optional): COC-61131  
Road – amend COC69027  
Pipeline – amend COC69028

**PROJECT NAME:** APD for #1S-96-9-11BP

**LEGAL DESCRIPTION:** Sixth Principal Meridian, Colorado

Well pad: T1S, R96W,  
sec. 9, NW $\frac{1}{4}$ NW $\frac{1}{4}$ .

Pipeline/road: T. 1S., R. 96 W.,  
sec. 16, E $\frac{1}{2}$ W $\frac{1}{2}$ ,  
sec. 21, NE $\frac{1}{4}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$ , S $\frac{1}{2}$ SW $\frac{1}{4}$ ,  
sec. 28, E $\frac{1}{2}$ W $\frac{1}{2}$ ,  
sec. 32, lots 1 and 8,  
sec. 33, N $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$ .

T. 2S., R. 96 W.,  
sec. 4, lot 17,  
sec. 5, lots 12, 18, 19,  
sec. 8, lot 2.

**APPLICANT:** XTO Energy Inc.

### **DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:**

**Proposed Action:** The applicant proposes to construct 1 well pad and associated access road. Well pad #1S-96-9-11BP would be 500' x 430' (5 ac.) with a production pad 200' x 100' (0.5 ac.), and an access road of 6 miles, most of which would be the upgrading of an existing two track. The pipeline would follow the access road with a total ROW of 50' (including road & pipeline) for a surface disturbance of 36 ac. Total surface disturbance on BLM would be

approximately 41.5 acres. XTO proposes to straighten the road from unnecessary curves that might be a hazard to oilfield service units. This area has recently been burned in a forest fire and no live trees will be affected by the re-routing. This upgrade will occur on BLM land. Changes and additional construction requirements, if necessary, should be addressed in the COAs.

- No new access will be required.
- Approximately 3.5 miles of additional upgrades will be necessary to reclaim old road to oilfield service road (BLM) standards.
- Typically both existing roads and new access roads require up to 40' of disturbed width in order to obtain a 20' driving surface. If both the road and pipeline are capable of sharing the ROW, then only 50' of disturbed width may be needed.
- Maximum travel surface width would be 20' or less for the first six months, 25' or less if the well is successful or as stipulated in the COAs.
- Maximum grades will not exceed 10% after construction.
- No turnouts are planned at this time. Turnouts may be specified in the approved APD and only necessary if the well is successful.
- Only native materials will be used during construction. If necessary, gravel or rock may be purchased and used to improve road conditions and travel.
- Roads will be crowned and bar ditches will be located along either side. 18-24" dia. Culverts will be installed if necessary.
- Cattleguards will be installed if required and specified in the stipulations (if necessary).
- Surface disturbance and vehicular travel will be limited to the approved location and access road only. Any additional surface area needed must be approved by BLM in advance.
- If any additional right-of-way is necessary, no surface disturbing activities shall take place on the subject right-of-way until the associated APD is approved. The holder will adhere to conditions of approval in the Surface Use Program of the approved APD, relevant to any right-of-way facilities.
- If a right-of-way is secured, boundary adjustments in the lease or unit shall automatically amend this right-of-way to include that portion of the facility no longer contained within the lease or unit. In the event of an automatic amendment to this right-of-way grant, 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.
- If at any time the facilities located on public lands authorized by the terms of the lease are no longer included in the lease (due to a contraction in the unit or other lease or unit boundary change) the BLM will process a change in authorization to the appropriate statute. The authorization will be subject to appropriate rental, or other financial obligations as determined by the BLM.
- If the well is productive, the access road will be rehabilitated as needed and brought to Resource (Class III) Road Standards within a time period specified by the BLM. If upgraded, the access road must be maintained at these standards until the well is properly abandoned. If this time frame cannot be met, the Field Office Manager will be notified so that temporary drainage control can be installed along the access road.

- On site production facilities would consist of a wellhead, flow lines (typ. 3”-6” dia.), artificial lifting system (if necessary), wellhead compression (if necessary), gas/oil/water separator (3 phase), gas measurement and water measurement equipment, and a heated enclosure/building for weather and environmental protection. The tanks would be surrounded by a berm constructed to contain 1½ times the volume of the largest tank (s). The tanks typically necessary for the production of this well will be one 210 bbl steel above ground tank for the collection and sale of oil/condensate and two 400 bbl steel above ground tanks for produced water. All loading lines and valves for these tanks will be placed inside the berm surrounding the tank battery.
- All oil/condensate/gas production and measurement shall conform to the provisions of 43 CFR 3162.7 and Onshore Oil and Gas Order No. 4 and No. 5. The measurement and sales of all gases and oils produced from this lease (Fed. # COC-61464) will be sold from a sales point (gas flow meter or tank) that remains within the lease boundary. The sales point will not be used for the additional measurement and sales of (off-lease) gases and oils without receiving prior approval from the BLM. Other on-site equipment and system may include methanol injection and winter weather protection.
- All production facilities would be painted a flat, non reflective color as specified by BLM within 6 months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) may be excluded.
- If necessary, off site facilities (both on-lease and off-lease) may include central compression, gas processing, separation, tanks, pits, electronics, gas measurement and possibly a produced water disposal (SWD) well.
- The well will be produced into a 4”-8” steel gas pipeline and transported to either an existing pipeline ROW (3<sup>rd</sup> party transporter) or gas processing facility. This proposed pipeline will be located south of the well pad (approach) and follow the access road and tie in to the existing pipeline on the south edge of sec.21.
- There are no plans to include powerlines in this application. In the event power is required, a ROW application will be submitted to the appropriate agencies.
- Water will be piped from an unidentified source through lines typically laid on top of the ground. If necessary, water may also be trucked via third party to the location over approved access roads. Water obtained on private land, or land administered by another agency, will require approval from the owner or agency for use of said water.
- Pad construction material will be obtained from (if the material is Federal owned, a map will be included showing the location of the material): All construction material will be purchased from private landowners and or from a commercial gravel/materials pit. All material will be trucked to location via third party trucking using only approved access roads.
- The use of materials under BLM jurisdiction will conform to 43 CFR 3610.2-3, if applicable.
- The reserve pit will be typically lined with a synthetic material, ~12 mils in thickness. The reserve pit shall be located in cut material, with at least 50% of the pit volume below original ground level. Three sides of the reserve pit will be fenced before drilling starts. The fourth side will be fenced as soon as drilling is completed, and shall remain until the pit is dry. The amount of time the pit may remain open will typically be specified by the COAs in the APD. Once dry, the pit liner will be cut and removed at the mud line and the pit will be covered and buried in place.

- Trash must be contained in a trash cage and hauled away to an approved disposal site as necessary but no later than at completion of drilling operations.
- Sewage from trailers and chemical portable toilets will be removed on a regular basis by a third party contractor and disposed of at an authorized sanitary waste facility.
- Any and all chemicals used during the drilling and completion of the well will be kept to a minimum and stored within the boundaries of the well pad. The third party chemical contractor will be responsible for containment and clean-up and removal of all spilled chemicals on location.
- No ancillary facilities will be required during the drilling or completion of the well.
- All equipment and vehicles that will be used to drill and complete this well will remain within the boundaries of the approved well pad. Any equipment and or vehicles parked or stored off of the location will be considered trespassing on private land and will NOT be tolerated.
- Materials obtained from the construction of location, like topsoil and vegetation will be stockpiled as indicated and permitted by the approved APD. The stockpiles themselves may be outside the approved boundaries of the well pad.
- The top 6" of topsoil material will be removed from the location and stockpiled separately as specified by the approved APD.
- Topsoil along the access road will be reserved in place adjacent to the road as indicated by the approved APD.
- Within 30-45 days after completion of well, all equipment that is not necessary for production shall be removed.
- The reserve pit and that portion of the location not needed for production will be reclaimed in a given time period as specified by the BLM in the approved APD.
- Before any dirt work to restore the location takes place, the reserve pit must be dry and ready for burial. If necessary, any approvals needed to commence the burial operation will be obtained.
- All road surfacing will be removed prior to the rehabilitation of roads, if necessary.
- Reclaimed roads will have the berms and cuts reduced and will be closed to vehicle use.
- All disturbed areas will be recontoured to replicate the natural slope.
- The stockpiled topsoil will be evenly distributed over the disturbed area.
- Prior to seeding, all disturbed areas, including the access roads will be scarified and left with a rough surface.
- Seed will be drilled or broadcast between during a time specified by the BLM and or state. If broadcast, a harrow or some other implement will be dragged over the seeded area to assure uniform seed coverage. The seed mixture will be specified by BLM.
- If necessary an abandonment marker will be one of the following, as specified by BLM:
  - at least 4' above ground level, or
  - at restored ground level, or
  - below ground level.
- In any case the marker shall be inscribed with the following: operator name, lease number, well name and surveyed description (township, range, section and either ¼ ¼ section or footages).
- The surface and minerals are owned by the United States Federal Government and are managed by the Bureau of Land Management.

A BLM approved contractor will submit the appropriate reports to the agency as required for archaeological concerns.

The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and contact the appropriate BLM Field Office for further instructions.

A BLM approved contractor will submit the appropriate reports for threatened and endangered species concerns to the agency as required. Special stipulations will be included in the COAs of the approved APD.

Current wildlife restrictions and closure dates, if applicable, will be specified in the approved APD.

Total surface disturbance on BLM would be approximately 41.5 acres. The date the work would start would be 10/2006.

**No Action Alternative:** The project would not be approved; therefore there would not be any environmental impacts.

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

**NEED FOR THE ACTION:** To respond to request by applicant to exercise lease rights to construct access roads, well pads, and install pipelines to develop hydrocarbon reserves.

**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 (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 / MITIGATION MEASURES:**

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

### **CRITICAL ELEMENTS**

#### **AIR QUALITY**

*Affected Environment:* The entire White River Resource area has been classified as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed action is not located within a ten mile radius of any special designation air sheds or non-attainment areas. The air quality criteria pollutant likely to be most affected by the proposed actions is the level of inhalable particulate matter, specifically particles ten microns or less in diameter (PM<sub>10</sub>) associated with fugitive dust. In addition, slight increases in the following criteria pollutants: carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, and sulfur dioxide may also occur during construction due to the combustion of fossil fuels associated with construction operations. Also, non-criteria pollutants such as visibility, nitric oxide, air toxics (e.g. benzene) and total suspended particulates (TSP) may also experience slight short term increases as a result of the proposed actions (no national ambient air quality standards have been set for non-criteria pollutants). Unfortunately, no monitoring data is available for the survey area. However, it is apparent that current air quality near the proposed location is good because only one location on the western slope (Grand Junction, CO) is monitoring for criteria pollutants other than PM<sub>10</sub>. Furthermore, the Colorado Air Pollution Control Division (APCD) estimates the maximum PM<sub>10</sub> levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be near 50 micrograms per cubic meter (µg/m<sup>3</sup>). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM<sub>10</sub> (24-hour average) of 150 µg/m<sup>3</sup>.

*Environmental Consequences of the Proposed Action:* Cumulative impacts detrimental to air quality in the Piceance Creek Basin can be expected as carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, particulate matter, and sulfur dioxide levels are elevated due to increased oil and gas development. Construction equipment producing elemental and organic carbon via fuel combustion combined with surface disturbing activities that leave soils exposed to eolian processes will both increase production of particulate matter (PM<sub>10</sub>) during construction. Elemental and organic carbon existing in the air as PM<sub>10</sub> can reduce visibility and increase the potential of respiratory health problems to exposed parties. However, following initial construction, suggested mitigation, and successful interim reclamation, criteria pollutant levels should return to near pre-construction levels.

*Environmental Consequences of the No Action Alternative:* Impacts are not anticipated from the no-action alternative.

*Mitigation:* The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter. Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour. Disturbed areas will be restored to original contours, and revegetated with a BLM preferred seed mixture. Following seeding, woody debris cleared from the ROW will be pulled back over the pipeline to increase effective ground cover and help retain soil moisture.

Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.

## **CULTURAL RESOURCES**

*Affected Environment:* The proposed well pad location, access road and potential well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Guy-Hayes 2006, Compliance Dated 9/11/2006) with no cultural resources identified in any of the inventoried areas. There are no known cultural resources within 308 meters of the proposed project developments.

*Environmental Consequences of the Proposed Action:* The proposed action will not impact any known cultural resources.

*Environmental Consequences of the No Action Alternative:* There would be no new impacts to cultural resources under the No Action Alternative.

*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 knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be

used (assuming in situ preservation is not necessary)

- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with 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), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

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

*Affected Environment:* Noxious weeds known to occur immediately north of the project area include houndstongue (*Cynoglossum officinale*), mullein (*Verbascum thapsus*), Russian, spotted and diffuse knapweeds (*Centaurea sp*), bull thistle (*Cirsium vulgare*), yellow toadflax (*Linaria vulgaris*) and black henbane (*Hyoscyamus niger*). The Magnolia area is a veritable hot bed for noxious weed infestations due primarily to the continuous earthen disturbance which has and continues to occur there. Spotted knapweed has been located and treated on the proposed access in SESW Sec 28, T 1 S R 96 W. The invasive alien annual cheatgrass occurs throughout the project area in association with unvegetated earthen disturbance along roads, wells, and pipelines.

*Environmental Consequences of the Proposed Action:* The combination of the access road off of Magnolia, an existing noxious weed hotbed, and the amount of new earthen disturbance associated with this action means that there is a high potential for noxious weed establishment and proliferation if the proposed mitigation is not strictly adhered to. The proposed action will create about 30 acres of new earthen disturbance, which if it is not revegetated with desirable species and /or treated with herbicides to eradicate noxious weeds/ cheatgrass, will be invaded and dominated by noxious weeds/cheatgrass, increasing the potential for fire and the consequent further proliferation of cheatgrass. Noxious weeds could also spread from the project site to surrounding native rangelands resulting in a long term negative impact. The resulting proliferation of noxious weeds/cheatgrass will perpetuate a downward cycle of environmental degradation that will be largely irreversible. There will be a low likelihood of long term negative impact if the proposed mitigation is properly implemented.

*Environmental Consequences of the No Action Alternative:* There will be no change from the present situation.

*Mitigation:* The operator will be required to monitor the project area for a minimum of five years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

## **MIGRATORY BIRDS**

*Affected Environment:* The proposed well location and much of the access route (approximately 3.5 miles) are located in an area that has recently (~ 3 - 4 yrs ) burned. Access to the location will be along an existing two-track and will involve some upgrading, including widening and straightening. With the exception of a small portion (~ 25 acres) of mature pinyon-juniper, the remainder of the access route is comprised of a big sagebrush community that has become heavily encroached with pinyon-juniper regeneration.

There are a number of migratory birds that fulfill nesting functions in the big sagebrush, grassland, and pinyon-juniper communities traversed by this project during the months of May, June, and July, including several species identified as having higher conservation interest by the Rocky Mountain Bird Observatory, Partners in Flight program (i.e., Virginia's warbler, Brewer's sparrow, gray flycatcher, black-throated gray warbler). Because the project area is composed largely of former sagebrush community that has become heavily encroached with pinyon-juniper regeneration and open-canopied submature forms; neither sagebrush nor pinyon-juniper associates are well represented. Woodland species associated with cavities and mature stands (e.g., accipitrine hawks, juniper titmouse) are generally absent.

Although this high plateau area has no open water or wetland areas that support or attract waterfowl use, 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:* Construction and drilling associated with this project is scheduled to begin by late October 2006 and would likely be finalized prior to the 2007 breeding season. It is likely that the pipeline would also be installed prior to mid-May and as such, this project would have no direct influence on breeding bird nesting activity during the 2007 breeding season.

Access to the proposed location is along an existing two-track that likely has no significant influence on breeding bird success or distribution. Road upgrading (e.g., widening and straightening) and pipeline installation would involve the clearing of a 50 foot right-of-way which would remove about 21 acres of big sagebrush, submature pinyon-juniper, and grassland habitats. With regular and frequent vehicle travel on this route, it is likely that breeding bird densities would be reduced in close proximity to this corridor. Assuming notable use reductions within 100 feet of disturbance, it is likely that habitat capacity for nesting birds would be strongly reduced on about 106 acres. Based on local breeding bird information, this habitat base would be expected to support up to 55 nests, most of which would be more generalized species that are capable of exploiting transitional shrubland (e.g., chipping sparrow, spotted and green-tailed towhees, blue-gray gnatcatcher) and grassland (e.g., meadowlark, Vesper's sparrow and

lark sparrow) habitats, but would undoubtedly involve a number of higher interest species such as Virginia's and black-throated gray warbler.

It has recently been brought to 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.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have potential to disrupt the breeding activities or habitats of migratory birds.

*Mitigation:* 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 such birds (e.g., migratory waterfowl, shorebirds, wading birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, 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 activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

#### **THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES** (includes a finding on Standard 4)

*Affected Environment:* There are not any listed, proposed, or candidate animals' species to the Endangered Species Act that are known to inhabit or derive important benefit from areas within the project site. The proposed pad and approximately 3.5 miles of the access route are located in a previously burned area. With the exception of a small section of mature pinyon-juniper which may potentially be influenced, much of the remaining woodlands associated with this ridgeline are composed of regenerating or submature pinyon and juniper that have encroached on sagebrush and mixed shrub disclimax communities (fire-induced). These woodlands do not have sufficient structure to support roosting or nesting functions of BLM-sensitive bats (Townsend's big eared bat, Yuma and fringed myotis) or the northern goshawk. Per BLM's request, a portion (~25 acres) of mature pinyon-juniper woodlands immediately west of the access route were surveyed for evidence of raptor nest activity, namely accipitrine species, by a wildlife consultant (report on file at the White River Field Office, Meeker). No active nests or evidence of previous nesting activity were observed.

The Magnolia area hosts a small, remnant population of greater sage grouse that are the target of population and habitat restoration efforts by the BLM and CDOW. The greater sage-grouse is considered a BLM-sensitive species and is the subject of considerable management emphasis on

a local and national basis, including concerted habitat restoration activities by BLM and CDOW. Suitable habitat is generally confined to a relatively narrow 2- to 3-mile band of sage steppe habitats north of Rio Blanco County (RBC) 3 and south of a front of sagebrush habitats that, in an advanced successional status, support excessive woodland or serviceberry components. Recently relocated after being displaced from a site immediately adjacent to RBC 3, Magnolia's single sage-grouse strutting ground (up to 8 roosters in 2005) is located about 2500' north of the closest point on RBC 3 and within the line of sight (about 400 m northeast) of the intersection of RBC 3 and Collins Gulch. This insular population fulfills virtually all its life history requirements, including nesting, brood-rearing and wintering functions in this constricted band of habitat roughly between Greasewood Gulch and Dark Canyon. This habitat corridor has become increasingly isolated from potential habitats lying to the south and west by frequent traffic along RBC 3, heavy gas drilling activity along its southern rim, and a spate of gas processing and compressor facility installation on its southwest corner. The habitat parcel itself is bisected by a series of ridgeline roads and a number of pipeline and powerline corridors.

*Environmental Consequences of the Proposed Action:* Well development would intersect between 2 to 3 miles of greater sage-grouse habitat that is used throughout the year by the small and insular Magnolia population. Project development is scheduled such that it would not intentionally coincide with the more sensitive period of reproduction, including nesting and brood-rearing, although it is likely that vehicle traffic will encounter birds through the fall and winter along the access road. The development of the access and pipeline corridor and attending traffic would introduce factors that increase the risk of direct mortality (e.g., vehicle collisions), predation (e.g., corridors cleared of effective hiding cover), or disruption of important seasonal reproductive functions (e.g., nesting attempts). Efforts to reestablish effective ground cover, reduce the risk of vehicle collisions, and confining disturbances to least critical timeframes (see mitigation below) would minimize mortality and the short and longer term deterioration of habitat utility. Effectively implemented, these actions would reduce impacts to the Magnolia sage-grouse population to discountable levels.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have potential to adversely influence the Magnolia sage-grouse population or its associated habitat.

*Mitigation:* It is requested that the permanent combined right-of-way width be minimized to the extent practical from RBC 3 north 16,000 feet (3 miles) by using the access road as part of the pipeline working surface.

It is requested that the operator voluntarily agree to conditions whereby employees and any personnel associated with subcontractors refrain from possessing firearms or dogs on the job.

Traffic associated with well development, production, and maintenance activities would be limited to speeds of less than 35 miles per hour. Posting and enforcement of these speed limits or the installation of speed deterrents would be the responsibility of the operator.

Through the life of the well, subsequent well and pipeline maintenance activities that occur between March 1 and July 15 should strictly avoid the periods of 0.5 hour before sunrise to 2

hours after sunrise, and 1 hour before sunset to sunset. All vehicular access to the well and pipeline, including snowmobile and ATV use, shall remain on designated access roads.

In those areas that are composed predominantly of shrubs, woody debris cleared from the road and pipeline corridor should be redistributed uniformly across the pipeline corridor after final recontouring and seeding operations are complete.

Due to extent and distribution of habitat modification and anthropogenic features impinging on occupied sage-grouse habitats, development of the access, well, and pipeline (including well completion activities) would not be allowed between March 1 and July 7.

*Finding on the Public Land Health Standard for Threatened & Endangered species:*

## **WASTES, HAZARDOUS OR SOLID**

*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.

*Environmental Consequences of the Proposed Action:* 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 some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

*Environmental Consequences of the No Action Alternative:* No hazardous or other solid wastes would be generated under the no-action alternative.

*Mitigation:* The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

## **WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)**

*Affected Environment:* The proposed action is located in the Lower Piceance Creek fifth level watershed. The proposed well pad location, access road and associated pipeline are situated entirely within stream segment 16 of the White River Basin. 6<sup>th</sup> and 7<sup>th</sup> level watersheds affected by the proposed action are Greasewood Gulch, Dry Fork Piceance Creek, Reagan Gulch, and Timber Gulch. Greasewood Gulch (ephemeral) and Dry Fork Piceance Creek (intermittent in lower reaches and perennial in the upper reaches) are both tributaries to Piceance Creek. Reagan Gulch (ephemeral) and Timber Gulch (perennial) are both tributaries to Dry Fork Piceance Creek. Piceance Creek is a perennial tributary to the White River. The White River is a tributary to the Green River (in Utah) which is a tributary to the Colorado River.

The proposed project area will disturb a recently burned area that is currently experiencing accelerated rates of erosion. This is evident as sediment retention ponds constructed by the BLM post burn in the fall of 2004 required maintenance that same fall to remove sediment. Currently these ponds are again filled to capacity and in need of maintenance.

The “Status of Water Quality in Colorado –2006” (CDPHE 2006b) and Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a) were reviewed for information relating to drainages within the project area.

Stream segment 16 of the White River Basin is defined as all tributaries to Piceance Creek, including all wetlands, lakes and reservoirs, from the source to the confluence with the White River, except for the specific listings in segments 17, 19, and 20. The State has classified stream segment 16 of the White River Basin as “Use Protected” and further designated as beneficial for the following uses: Warm Aquatic Life 2, Recreation 2, and Agriculture. The antidegradation review requirements in the Antidegradation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. For this reach, minimum standards for three parameters have been listed. These parameters are: dissolved oxygen = 5.0 milligrams per liter (mg/l), pH = 6.5 - 9.0, and Fecal Coliform = 2,000/100 milliliters (ml) and 630/100 ml E. coli. Numeric standards for inorganic compounds and metals can be found within Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a).

Newly promulgated Colorado Regulations Nos. 93 and 94 (CDPHE 2006c and 2006d, respectively) were reviewed for information related to the proposed project area drainages. Regulation No. 93 is the State’s Section 303(d) list of water-quality-limited segments requiring Total Maximum Daily Loads (TMDLs). The 2006 303(d) list of segments needing development of TMDLs includes two segments within the White River - segment 9b, White River tributaries North and South Forks to Piceance Creek, specifically the Flag Creek portion (for impairment from selenium with a low priority for TMDL development) and segment 22, tributaries to the White River, Douglas Creek to the Colorado/Utah boarder, specifically West Evacuation Wash, and Douglas Creek (sediment impairments). Regulation 94 is the State’s list of water bodies identified for monitoring and evaluation, to assess water quality and determine if a need for TMDLs exists. The list includes two White River segments that are potentially impaired – 9 (Flag Creek) and 22 (Soldier Creek). Stream segment 16 was not listed.

Stream flows in Piceance Creek and its tributaries generally peak in mid spring as a result of high elevation snowmelt and periodically during late summer and early fall in response to high intensity precipitation events. Approximately eighty percent of annual flows in Piceance Creek originates as discharge from alluvial and bedrock aquifers (Tobin, 1987). Ephemeral drainages flow only in direct response to snowmelt and intense summer and early autumn storms.

Approximately 98% of the precipitation in the Piceance Basin is lost to evapotranspiration. The remaining water runs off rapidly and replenishes streamflow or recharges bedrock and alluvial aquifers. Ground water recharge areas generally are located in higher parts of the drainage basin. The recharge moves slowly laterally and downward into the upper aquifer system, passes through the Mahogany zone (leaky confining unit) and enters the lower aquifer system through fractures and solution openings. The water in the upper and lower aquifers moves horizontally

through the basin to the discharge areas. In the Piceance drainage basin, the water eventually moves upward back through the aquifer system where it discharges into the valley-fill alluvial aquifer or emerges as springs in the stream valleys (Taylor 1987).

The stream banks of Piceance Creek are generally composed of sand, silt, and clay particles that are less than about one-tenth of an inch in diameter. The bank materials erode easily when stream discharge increases during peak flow conditions. Bank erosion is probably most prominent during the spring snowmelt when high flows persist for several days. The bank material absorbs a large amount of water, becomes soft and easily removable, and sloughs into the stream in large clumps. The stream bed of Piceance Creek is composed of silt, sand, gravel, and occasional cobbles, with pockets of fine material where the velocity of the stream generally is slow. Coarse streambed materials normally move only under peak flow conditions (Norman 1987).

**Ground Water:** Surface geologic formation at the proposed pad location and the upper portion of the access road and pipeline is Tertiary in age (Uinta Formation) and consists primarily of interbedded sandstone and siltstone. A review of the US Geological Survey Ground Water Atlas of the United States (Topper et al., 2003) was done to assess ground water resources at the location of the proposed action. The proposed action is located in the Piceance Creek structural basin. Primary bedrock aquifers within the Piceance Basin are listed in table 1.

**Table 1:**

<b>Summary of Hydrogeologic Units</b>						
<b>Hydrogeologic Unit</b>	<b>Stratigraphic Unit</b>	<b>Physical Description</b>	<b>Thickness</b>	<b>Hydraulic Conductivity</b>	<b>Yield</b>	<b>TDS</b>
			<b>(ft)</b>	<b>(ft/day)</b>	<b>(gpm)</b>	<b>mg/L</b>
<b>Upper Piceance Basin aquifer</b>	Uinta Formation	sandstone, fractured siltstone, fractured marlstone	0 – 1,400	<0.2 to >1.6	1- 900	500-1,000
Mahogany confining unit	Green River Formation	dolomitic marlstone and shale	500-1,800	<0.01	<25	NL
<b>Lower Piceance Basin aquifer</b>	Green River Formation	shale, fine-grained sandstone, fractured marlstone	0 – 1,870	<0.1 to >1.2	1-1,000	1,000-10,000
Basal confining unit	Green River Formation, Wasatch Formation	claystone, siltstone, clay rich oil shale, marlstone, channel sandstone	0-6,800	<0.01	<10-100	NL
<b>Fort Union aquifer</b>	Fort Union Formation	Coarse-grained sandstone	Very thin	NL	NL	NL
<b>Mesaverde aquifer</b>	Mesaverde Group	sandstone interbedded shale and coal	Averages 3,000	0.0001-1.0	NL	NL
Mancos confining unit	Mancos Shale	mostly shale but Frontier Sandstone may be local aquifer	>7,000	NL	NL	NL

Abbreviations: ft = feet, approx = approximate, avg = average, gpm = gallons per minute, mg = milligrams, L = liters, and NL = not listed.

Table information from Topper et al. (2003).

The water chemistry of the upper bedrock aquifers is dominated by dissolved calcium, magnesium, and bicarbonate along the rim of the basin; and by sodium, magnesium, bicarbonate, and sulfate in the central part of the basin. These constituents are characteristic of water in the upper aquifers, principally the Uinta Formation. Sodium and bicarbonate are the dominant dissolved constituents in the upper aquifers generally are lower than 1,000 milligrams per liter. Characteristic trace elements include strontium in concentrations of several milligrams per liter in the Uinta Formation, and fluoride in concentrations of greater than 1 milligram per liter in water samples from the lower part of the upper aquifers (Tobin, 1987).

*Environmental Consequences of the Proposed Action:* Surface Water: Clearing, grading, and soil stockpiling activities may temporarily alter overland flow and natural groundwater recharge patterns. Near-surface soil compaction caused by construction equipment and vehicles could reduce the soil's ability to absorb water and could increase surface runoff, sedimentation and salt loading to surface waters in of the Colorado River System. The magnitude and duration of potential impacts to surface runoff and groundwater recharge would depend on soil depth, soil type, vegetation type and density, slope, aspect, erosive force of rainfall or surface runoff, and duration and extent of construction activities. Improper drainage and sediment retention structures associated with all surface disturbing activities will likely result in significant rates of hill slope soil erosion from burned areas ultimately increasing sediment/salt loads down stream. Impacts would likely be greatest immediately following completion of construction activities and would likely decrease thereafter due to reclamation procedures.

Toxic metals and organic substances associated with fluid mineral development (such as substances found in produced water) that are relatively insoluble in water may be adsorbed on the surface of sediments and transported with sediment to surface waters further deteriorating water quality in the Colorado River System. In addition, spills or leaks of produced water or mechanical means of produced water evaporation which may result in overspray would likely result in increased salt deposits (notably sodium and chlorides). Salt deposition resulting from spills, leaks, or overspray may adversely impact the health of surrounding vegetation reducing effective ground cover and increasing the potential for soil erosion. In addition, salts deposits would likely be carried down gradient to surface waters of the Colorado River system deteriorating water quality.

Ground Water: In the event of any leaks or spills, local ground water may be adversely impacted as runoff could carry contaminants down gradient to alluvial aquifers such as the Piceance Creek alluvium which is situated hydrologically down gradient from the proposed actions. Potential for ground water contamination in bedrock aquifers increases if fractures in confining units are formed. Hydraulic conductivity increases exponentially along fracture zones resulting in rapid transport of fluids/contaminants in these areas. The upper and lower Piceance Basin aquifers have differing water qualities, mixing will degrade water quality in the upper aquifer which is generally of better quality. Storage or surface disposal methods (e.g. evaporation ponds) for produced water would also elevate potential for contaminating ground water of the Upper Piceance Basin Aquifer, and Piceance Creek Alluvial Aquifer.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation: Surface Water:* The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan\_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the BLM Authorized Officer is required within 45 days of the APD approval date to indicate that the US Army Corps of Engineers has been notified prior to construction or that 404 Permits have been obtained or are not required by the permitting agency. Written documentation may be a copy of the Pre-Construction Notification (PCN) Form or an official verification letter from the US Army Corps of Engineers to the operator stating that a permit has been issued or is not required for the activities in question. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan\_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

To mitigate additional soil erosion at the well pad and potential increased sediment and salt loading to nearby surface waters, all disturbed areas affected by drilling or subsequent operations, except areas reasonably needed for production operations, shall be reclaimed as early and as nearly as practicable to their original condition and shall be maintained to control dust and minimize erosion (COGCC). To allow optimal opportunity for interim reclamation of well pads, all tanks and production facilities will be situated on the access road side of the well pad (unless otherwise approved by the WRFO-BLM Area Manager). Reclamation efforts on all pipelines will be final. Interim reclamation of well pads and final reclamation of pipeline right of ways (ROW) will commence as follows:

- Debris and waste materials other than de minimus amounts, including, but not limited to, concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe and cable, as well as equipment associated with the drilling, re-entry or completion operations shall be removed (COGCC).
- Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.
- Stockpiled topsoil will be seeded with a BLM approved seed mixture. Topsoil stockpiles that will potentially remain in place for extended periods of time (e.g. multi-well locations) will be covered with biodegradable fabrics such as (but not limited to) jute netting or Curlex and seeded with the appropriated seed mixture.
- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.

- Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces affected by pipeline/road construction, drilling or subsequent operations, except areas reasonably needed for production operations. Areas on *well pads* not needed for production operations shall be partially reshaped as early and as nearly as practicable to near pre-construction contours. Pipelines will be recontoured to pre-construction contours as soon as construction activities cease.
- The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in recontouring/partial-reshaping efforts.
- Recontoured/partially-reshaped areas will be seeded with a BLM approved seed mixture, and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex...) to provide additional protection to topsoil, retain soil moisture, and help promote desired vegetative growth.
- Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured/partially-reshaped areas to act as flow deflectors and sediment traps. Available woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
- The operator will be responsible for excluding livestock grazing from all reclaimed portions of *well pad*. To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced wooden corners will be constructed around all reclaimed portions of the well pad including cut and fill slopes following placement of woody debris (unless otherwise instructed by the BLM).
- The operator will be responsible for achieving a reclamation success rate of sufficient vegetative ground cover from reclaimed plant species within three growing seasons after the application of seed. The ground cover of reclaimed seed species shall be at a Potential Natural Community (PNC) state in relation to the seed mix as deemed appropriate by the BLM. Rehabilitation efforts must be repeated if it is concluded that the success rate is below an expectable level as determined by the BLM.

Upon final abandonment of the well pad, new access road, and completion of pipelines, 100% of all disturbed surfaces will be restored to pre-construction contours, and revegetated with a BLM preferred seed mixture. Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative (straw bails, woody debris, straw waddles, biodegradable fabrics...) techniques. All available woody debris will be pulled back over recontoured areas (woody debris will not account for more that 20% of total surface cover) to help stabilize soils, trap moisture, and provide cover for vegetation. Monitoring and additional reclamation efforts will persist until reclamation is proven successful (as determined by the BLM).

In addition to the above stipulations, cut and fill slopes will be promptly seeded and covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex...). Because of the vulnerable state of the affected soils, silt fences will be *properly* installed at the base of the fill slope. Straw waddles will be positioned in the affected drainages down gradient of all surface disturbing activities to provide additional soil stabilization. Finally, excess large woody debris cleared from the proposed well pad location and ROW will be positioned in

drainage ways, adjacent to disturbed sites, and perpendicular to flow in attempts to dissipate runoff intensity, trap sediment, and prolong the life of sediment retention structures constructed by the BLM in 2004.

Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment shall be used to intercept such contaminants prior to infiltrating soils and contaminating ground water. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

*Finding on the Public Land Health Standard for water quality:* Stream segment 16 of the White River Basin currently meets water quality standards set by the state. Many of the upper tributaries which are ephemeral and flow in direct response to storm events do not meet the standards during periods of flow. Following suggested mitigation measures, water quality in the affected stream segment should continue to meet standards.

## **WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)**

*Affected Environment:* The closest channel system supporting riparian vegetation is the State-owned portion of the Dry Fork of Piceance Creek, which is separated by approximately 900 m of ephemeral channel from the proposed action.

*Environmental Consequences of the Proposed Action:* This pad is situated on the end of a ridge separated from the nearest riparian system by approximately 900 m of ephemeral channel. Pad, pipeline, and road construction would have no direct impact on riparian/wetland resources. With the application of BMPs associated with soil erosion there is no reasonable likelihood that fugitive sediments would have any influence on the function or condition of the Piceance Creek channel or its associated riparian resources.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have any direct or indirect influence on downstream riparian communities.

*Mitigation:* None

*Finding on the Public Land Health Standard for riparian systems:* The Public Land Health Standards are not applicable to those reaches that support riparian vegetation since they are substantially State-owned. The nearest BLM-administered reach that supports riparian vegetation is along Piceance Creek, which is greater than 10 miles downstream. Neither the proposed or no-action alternative would have any reasonable potential to influence the function or condition of riparian and wetland habitat.

## **CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:**

No ACEC's, flood plains, prime and unique farmlands, Wilderness, or Wild and Scenic Rivers, threatened, endangered or sensitive plants exist within the area affected by the proposed action. For threatened, endangered and sensitive plant species Public Land Health Standard is not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status plants. There are also no Native American religious or environmental justice concerns associated with the proposed action.

## **NON-CRITICAL ELEMENTS**

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

### **SOILS** (includes a finding on Standard 1)

*Affected Environment:* The following data is a product of an order III soil survey conducted by the Natural Resources Conservation Service (NRCS) in Rio Blanco County, CO. Table 2 highlights important soil characteristics. A complete summary of this information can be found at the White River Field Office.

**Table 2:**

Soil Number	Soil Name	Acres w/in 30 meters	Slope	Ecological site	Salinity	Run Off	Erosion Potential	Bedrock
15	Castner channery loam	26.95	5-50%	Pinyon-Juniper woodlands	<2	Medium to rapid	Moderate to very high	10-20
70	Redcreek-Rentsac complex	6.61	5-30%	PJ woodlands/PJ woodlands	<2	Very high	Moderate to high	10-20
73	Rentsac channery loam	60.42	5-50%	Pinyon-Juniper woodlands	<2	Rapid	Moderate to very high	10-20

The proposed access road crosses CSU-1 "fragile soils" as well as a recently burned area. As outlined in the White River ROD/RMP, All surface disturbing activities encountering "fragile soils" will be allowed only after an engineered construction/reclamation plan is submitted by the operator and approved by the Area Manager. The following items must be addressed in the plan:

1. How soil productivity will be restored
2. How surface runoff will be treated to avoid accelerated erosion such as riling, gullyng, piping, and mass wasting.

*15-Castner channery loam* (5 to 50 percent slopes) is a shallow, well drained soil situated on mountainsides, ridgetops, and uplands. It formed in residuum derived from sandstone. The native vegetation is mainly pinyon and juniper and an understory of brush and grasses. Elevation is 6,900 to 7,800 feet. The average annual precipitation is 15 to 18 inches, the average annual air

temperature is 39 to 42 degrees F, and the average frost-free period is 80 to 105 days. Typically, the upper part of the surface layer is dark grayish brown channery loam about 7 inches thick. The lower part is dark grayish brown very channery loam about 4 inches thick. The underlying material is grayish brown, calcareous very channery loam about 6 inches thick. Sandstone is at a depth of 17 inches. Depth to sandstone ranges from 10 to 20 inches. Permeability of the Castner soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate to very high.

*70-Redcreek-Rentsac complex* (5 to 30 percent slopes) is located on mountainsides and ridges. The native vegetation is mainly pinyon and juniper trees with an understory of shrubs and grasses. Elevation is 6,000 to 7,400 feet. The average annual precipitation is 14 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 85 to 105 days. This unit is 60 percent Redcreek sandy loam and 30 percent Rentsac channery loam. The Redcreek soil is shallow and well drained. It formed in residual and eolian material derived dominantly from sandstone. Typically, the surface layer is brown sandy loam about 4 inches thick. The next layer is brown, calcareous sandy loam about 7 inches thick. The underlying material is very pale brown, calcareous channery loam 5 inches thick. Hard sandstone is at a depth of 16 inches. Depth to hard sandstone or hard shale ranges from 10 to 20 inches. Permeability of the Redcreek soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate to high.

The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone. Typically, the upper part of the surface layer is grayish brown channery loam about 5 inches thick. The next layer is brown very channery loam about 4 inches thick. The underlying material is very pale brown extremely flaggy loam 7 inches thick. Hard sandstone is at a depth of 16 inches. Depth to hard sandstone or hard shale ranges from 10 to 20 inches. Permeability of the Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate to high.

*73-Rentsac channery loam* (5 to 50 percent slopes) is a shallow, well drained soil found on ridges, foothills, and side slopes. It formed in residuum derived dominantly from calcareous sandstone. The native vegetation is mainly pinyon, juniper, brush, and grasses. Elevation is 6,000 to 7,600 feet. The average annual precipitation is 14 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is grayish brown channery loam about 5 inches thick. The next layer is very channery loam about 4 inches thick. The underlying material is extremely flaggy light loam 7 inches thick. Hard sandstone is at a depth of 16 inches. Depth to sandstone ranges from 10 to 20 inches. Permeability of this Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate to very high.

*Environmental Consequences of the Proposed Action:* Clearing and grading of well pads, pipeline right of ways and access road will remove protective vegetative cover from the affected soils accelerating the erosion process. Grading, trenching, and backfilling activities could cause mixing of the soil horizons and could result in reduced soil fertility reducing

revegetation potential. Water erosion of soils associated with construction activities (rutting of roads, etc...) will likely result in a net loss of valuable topsoil by sheet, rill, and gully erosion. Eroded topsoil and subsoil may increase salt loading and sedimentation to surface waters down gradient disturbed areas. Increased sedimentation/salt loads could adversely impact water quality and aquatic life. Because the proposed access road crosses “fragile soils” and a recently burned area (vegetative stability component has been removed), the severity of potential impacts would likely be magnified.

Any leaks or spills of environmentally unfriendly substances (e.g. diesel fuel) could compromise the productivity of affected soils. Decreased soil productivity will hinder reclamation efforts and leave soils further exposed to erosional processes.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation:* As outlined in the White River ROD/RMP, All surface disturbing activities encountering “fragile soils” will be allowed only after an engineered construction/reclamation plan is submitted by the operator and approved by the Area Manager. The following items must be addressed in the plan:

1. How soil productivity will be restored
2. How surface runoff will be treated to avoid accelerated erosion such as riling, gullyng, piping, and mass wasting.

The operator will be responsible for segregating topsoil material and backfilling of topsoil in its respective original position (last out, first in) to assist in the reestablishment of soil health and productivity. Erosion and sediment control measures will be installed on all slopes exceeding five percent to mitigate soil loss. Erosion and sediment control measures will be maintained until stream banks and adjacent upland areas are stabilized.

Mud blading will be prohibited and all activity shall cease when soils or road surfaces become saturated to a depth of three inches (on BLM administered lands) unless otherwise approved by the AO. All disturbed surfaces will be restored to natural contours and revegetated with a BLM approved seed mixture. Interim reclamation will follow the mitigation outlined in the Water Quality portion of this document.

*Finding on the Public Land Health Standard for upland soils:* Soils in the vicinity of the proposed action currently are meeting the standards. By following all suggested mitigation techniques and reclamation procedures, soil health should remain unchanged from current conditions.

## **VEGETATION** (includes a finding on Standard 3)

*Affected Environment:* The proposed access road goes through mixed mountain browse-mountain big sagebrush for roughly the first two and one half miles off of RBC Rd 3. The existing road is primitive at best. For the next  $\frac{3}{4}$  miles the road traverses mixed aged pinyon juniper woodlands. For the last two miles the road and access pad is in the Greasewood burn . This area burned in June 2004 and was previously mixed aged pinyon –juniper woodland. The

burn was successfully aerially seeded in the fall of 2004 and presently has a good stand of grasses and forbs.

*Environmental Consequences of the Proposed Action:* Two primary negative impacts will/could occur as a result of access road, pad and pipeline construction; 1) The 27- 30 acres disturbed as a result of pipeline, access road and pad construction will accelerate the rate of plant community fragmentation which is presently occurring in this area of Piceance Basin. This impact is unmitigated in the short term and likely, longer. 2) In terms of plant community composition, structure and function, the principal negative impact over the long term would occur if cheatgrass or noxious weeds are allowed to establish and proliferate on the disturbed areas resulting from pipeline and access road.

*Environmental Consequences of the No Action Alternative:* There will be no change in the existing situation.

*Mitigation:* Promptly revegetate all disturbed areas with Native Seed mix #3. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed. Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application.

Seed Mix #	Species (Variety)	Lbs. PLS per Acre	Ecological Sites
3	Western wheatgrass (Rosanna)	2	Gravelly 10"-14", Pinyon/Juniper Woodland, Stony Foothills, 147 (Mountain Mahogany)
	Bluebunch wheatgrass (Secar)	2	
	Thickspike wheatgrass (Critana)	2	
	Indian ricegrass (Nezpar)	1	
	Fourwing saltbush (Wytana)	1	
	Utah sweetvetch	1	
	Alternates: Needle and thread, globemallow		

If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities.

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): ): Upland plant communities in the area of the proposed project currently meet the Standard and are expected to continue to under the proposed action.

**WILDLIFE, AQUATIC** (includes a finding on Standard 3)

*Affected Environment:* This pad is separated from the nearest perennial reach (Dry Fork of Piceance) by approximately 900 m of ephemeral channel. The Dry Fork supports sporadic flow and a simple invertebrate community. Piceance Creek, separated by a minimum 3.5 miles

of ephemeral channel from the proposed action, supports the nearest vertebrate community. The nearest BLM-administered reach is about 2 miles further downstream of this point. Stream function and morphology on these downstream reaches are heavily modified by winter feeding and calving operations and summer season irrigation and haying practices, but the stream persists in supporting small populations of leopard frog, speckled dace, and flannelmouth sucker.

*Environmental Consequences of the Proposed Action:* This pad is situated on the crest of a ridge separated from the nearest aquatic system by 900 m of overland flow and ephemeral channel. Pad and road construction would have no direct impact on aquatic habitats. With the application of BMPs associated with soil erosion there is no reasonable likelihood that fugitive sediments would have any influence on the function or condition of the Piceance Creek channel or its associated aquatic values.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have any direct or indirect influence on downstream aquatic habitat.

*Mitigation:* None

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Vegetation and Wildlife, Terrestrial): The Public Land Health Standards are not applicable to downstream reaches that support prolonged intermittent or perennial flows since they are substantially private or State-owned. The nearest BLM-administered reach is greater than 10 miles downstream. Neither the proposed or no-action alternative would have any reasonable potential to influence the function or condition of subtending channels or their aquatic habitat values.

## **WILDLIFE, TERRESTRIAL** (includes a finding on Standard 3)

*Affected Environment:* The proposed well location and much of the access route (approximately 3.5 miles) are located in an area that has recently (~ 3 - 4 yrs ) burned. Access to the location will be along an existing two-track and will involve some upgrading, including widening and straightening. With the exception of a small portion (~ 25 acres) of mature pinyon-juniper, the remainder of the access route is comprised of a big sagebrush community that has become heavily encroached with pinyon-juniper regeneration.

The project area is categorized as general winter range for both deer and elk. The upper and middle elevation slopes of Magnolia are used extensively by deer and elk from September through December and again in April and May. Although the project area is used primarily during seasonal migration and the early winter months, smaller numbers of deer and elk summer across the project area in mesic draws.

As requested by BLM, approximately 25 acres of mature pinyon-juniper woodlands immediately adjacent to the proposed access route were surveyed for evidence of raptor nest activity by a wildlife consultant (report on file at the White River Field Office, Meeker). No active nests or evidence of previous nesting activity were observed.

Non-game wildlife using this area are typical and widely distributed in extensive like habitats across the Resource Area and northwest Colorado; there are no narrowly endemic or highly specialized species known to inhabit those lands potentially influenced by this action.

*Environmental Consequences of the Proposed Action:* The proposed action represents a substantial expansion of natural gas development activity to the north of Magnolia. Access to the well uses an existing two-track route and would, therefore, not add substantively to road density in this area, but the change in road character and increasing frequency of use would expand the extent of avoidance-related effects (i.e., behavioral avoidance and habitat disuse; increased energetic demands).

Localized road density is currently about 2.6 miles per square mile, which is within the desired road density objective (3 miles per square mile) established for big game winter ranges in the White River RMP. Because of the existing road network in this area, it is not feasible to mitigate the adverse effects of roads on big game habitat utility through gating.

The long-term occupation of about 21 acres of foraging area (pad and access road) and, later, reduction in woody overstory on about 6 acres for the pipeline would have negligible influence on big game forage availability, with the herbaceous component ultimately offset by reclamation.

Similar to the discussion above, road upgrading and pad construction would incrementally reduce the current extent and utility of associated nongame bird and mammal habitats. However, woodland habitats comprised primarily of regeneration and submature forms do not support a strong contingent of obligate woodland species due to suboptimal substrate (e.g., declining understory, relatively simple canopy structure, lack of cavities). The proposed action would likely preclude raptor nesting in about 25 acres of predominantly mature pinyon-juniper woodlands. Construction and drilling activities associated with this well would occur outside raptor nesting timeframes and would have little, if any potential influence on nest attempts that may occur in adjacent habitats. In the context of woodland habitats available in Piceance Basin (about 250,000 acres), this long term and unavoidable alteration of previously fragmented woodland is considered discountable. BLM is aware of no habitat-oriented method or technique that would be effective in mitigating the effect of this action, i.e., the incremental loss of woodland as raptor nest habitat. Rather, it is likely that the long term effect of the proposed action would represent a minor expansion of adjacent sage-steppe habitat.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have potential to affect resident wildlife populations or associated habitat.

*Mitigation:* The use of interim reclamation techniques will be used to the extent practicable on the pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) all disturbed areas are reseeded and, if necessary, effectively fenced to control livestock use once well completion

activities have been finalized (this includes cut and fill slopes of roads). In the event newly constructed access roads on BLM surface are no longer needed for well maintenance or development the roads will be recontoured to original grade.

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Vegetation and Wildlife, Aquatic): On a landscape scale, the project area meets the public land health standards for terrestrial animal communities. The proposed action is considered an incremental addition to those lands dedicated to mineral development, but would not detract appreciably from continued meeting of the land health standard at the landscape scale.

**OTHER NON-CRITICAL ELEMENTS:** For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management		X	
Forest Management			X
Geology and Minerals			X
Hydrology/Water Rights			X
Law Enforcement		X	
Noise		X	
Paleontology			X
Rangeland Management			X
Realty Authorizations			X
Recreation			X
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

## ACCESS AND TRANSPORTATION

*Affected Environment:* The proposed access for well pad #1S-96-9-11BP is BLM roads 1157, 1158 as well as a 1.4 mile long unnamed unnumbered two-track. The proposed action occurs in an area where cross country motorized travel is limited to existing routes for the period of October 1 through April 30 of each year. Cross-country motorized travel is permitted the remainder of the year.

*Environmental Consequences of the Proposed Action:* BLM roads 1157 and 1158 will be improved to allow for oil and gas exploration equipment and will be maintained to a BLM level three maintenance standard. The two-track will be extensively upgraded and to allow for oil and gas exploration equipment and will be maintained to a BLM level three maintenance standard.

*Environmental Consequences of the No Action Alternative:* None.

*Mitigation:* None.

## **FOREST MANAGEMENT**

*Affected Environment:* The proposed project is within the burn scar of the Greasewood fire. Woodland resources consist of dead standing piñons and junipers.

*Environmental Consequences of the Proposed Action:* The proposed well pad and access road are expected to knock down dead snags. The access road will improve access into the area and increase harvest of firewood from the burn area.

*Environmental Consequences of the No Action Alternative:* There would be no impact from the construction of the road or well pad and access into the area would not be improved and firewood harvest would not increase.

*Mitigation:* None

## **GEOLOGY AND MINERALS**

*Affected Environment:* The surface geologic formation of the well location is Uinta and XTO's targeted zone is in the Mesaverde. During drilling potential water, oil shale, and gas zones will be encountered from surface to the targeted zone. Aquifers that will be encountered during drilling are the Perched in the Uinta, the A-groove, B-groove and the Dissolution Surface in the Green River formation. These aquifer zones along with zones in the Wasatch formation are known for difficulties in drilling and cementing. Oil shale resources will be encountered in the Green River formation. The well is located on Federal oil and Gas Lease COC-061131

*Environmental Consequences of the Proposed Action:* The cementing procedure of the proposed action isolates the formations and will prevent the migration of gas, water, and oil between formations. This includes oil shale and coal zones. However, conventional recovery of the coals is not considered feasible at the depths that are encountered in the well. Development of this well will deplete the natural gas resources in the targeted formation

*Environmental Consequences of the No Action Alternative:* The natural gas resources in the targeted zone would not be recovered at this time.

*Mitigation:* None

## **HYDROLOGY AND WATER RIGHTS**

*Affected Environment:* The proposed action is located in the Lower Piceance Creek Fifth level watershed. Stream flows in Piceance Creek and its tributaries generally peak in mid spring as a result of high elevation snowmelt and periodically during late summer and early fall in response to high intensity precipitation events. Approximately eighty percent of annual flows in Piceance Creek originates as discharge from alluvial and bedrock aquifers (Tobin, 1987). Ephemeral drainages flow only in direct response to snowmelt and intense summer and early autumn storms.

Approximately 98% of the precipitation in the Piceance Basin is lost to evapotranspiration. The remaining water runs off rapidly and replenishes streamflow or recharges bedrock and alluvial aquifers. Ground water recharge areas generally are located in higher parts of the drainage basin. The recharge moves slowly laterally and downward into the upper aquifer system, passes through the Mahogany zone (leaky confining unit) and enters the lower aquifer system through fractures and solution openings. The water in the upper and lower aquifers moves horizontally through the basin to the discharge areas. In the Piceance drainage basin, the water eventually moves upward back through the aquifer system where it discharges into the valley-fill alluvial aquifer or emerges as springs in the stream valleys (Taylor 1987).

The stream banks of Piceance Creek are generally composed of sand, silt, and clay particles that are less than about one-tenth of an inch in diameter. The bank materials erode easily when stream discharge increases during peak flow conditions. Bank erosion is probably most prominent during the spring snowmelt when high flows persist for several days. The bank material absorbs a large amount of water, becomes soft and easily removable, and sloughs into the stream in large clumps. The stream bed of Piceance Creek is composed of silt, sand, gravel, and occasional cobbles, with pockets of fine material where the velocity of the stream generally is slow. Coarse streambed materials normally move only under peak flow conditions (Norman 1987).

One BLM spring has been identified within 0.5 miles of surface disturbing activities associated with the proposed actions. Table 3 outlines basic water quality, water rights, and legal descriptions for these water sources. A search of water rights through Colorado’s Decision Support Systems web site (CDSS, 2006) was done to identify water rights case numbers for each of the springs. BLM spring 160-40 has an adjudication date of 12/31/1993. Beneficial uses are livestock/wildlife watering.

**Table 3:**

Map Code	Twp	Range	Sec#	Quarter	Water Right	SC	pH	Q (cfs)	Date	Comments
160-40	1S	96W	17	NENE	93CW0036	1170	7.5	0.002	7/17/92	Supports riparian community (willows, cottonwood, cattails)

*Environmental Consequences of the Proposed Action:* Improper drainage from well pads, access roads, and pipeline rights of ways will elevate sediment production from disturbed areas. Increased sediment loads to local surface water drainages may result in a sediment rich system. Sediment rich systems are characterized by deposition and high width to depth ratios

(W/D ratio). As the W/D ratio increases (wide shallow channels) the hydraulic stress against the banks also increases and bank erosion is accelerated. Increases in the sediment supply to the channel develop from bank erosion, reducing the systems capability to transport sediment. As a result, deposition occurs, further accelerating bank erosion, and the cycle continues (Rosgen, 1996).

Construction activities may disrupt natural surface and ground water flow patterns. Altered flow patterns could disrupt natural surface and ground water recharge/discharge patterns. Changes to natural recharge/discharge patterns could have adverse impacts on stream channel morphology, productivity springs, riparian areas and aquatic life.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation:* For additional mitigation, concur with mitigation outlined in the Water Quality portion of this document.

## **PALEONTOLOGY**

*Affected Environment:* The proposed well pad location, access road and potential well tie pipeline route lies in an area generally mapped as the Uinta Formation which the BLM, WRFO has classified as a Condition I formation meaning it is know to produce scientifically important fossil resources.

*Environmental Consequences of the Proposed Action:* If, at any time, it becomes necessary to excavate into the underlying rock formation to construct/upgrade the access road, level the well pad or excavate the reserve/bloolie pit(s) or bury the well tie pipeline there is the potential to impact scientifically important fossil resources.

*Environmental Consequences of the No Action Alternative:* There would be no new impacts to fossil resources under the No Action Alternative.

*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 knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has

been completed, the operator will then be allowed to resume construction.

2. A paleontological monitor shall be present any time it is necessary to excavate into the underlying rock formation to construct/upgrade the access road, level the well pad, excavate the reserve/blooiie pit or bury the well tie pipeline a paleontological monitor shall be present for all such excavations.

## RANGELAND MANAGEMENT

*Affected Environment:* The proposed action is within the Little Hills allotment (06006) which is authorized for livestock grazing as follows:

Allotment		Permit #	Livestock		Period of Use	Percent Public Land	Authorized Use (AUM)
Number	Name		#	Kind			
06006	Little Hills, Burke Bros.	051405	50	C	04/15-04/30	100	26
			110	C	05/01-10/30	100	662
			5	H	05/01-10/30	100	30
			98	C	05/01-10/30	100	590
			100	C	05/01-10/30	100	602
			145	C	12/01-12/31	100	148

*Environmental Consequences of the Proposed Action:* The proposed action will disturb approximately 30 acres, resulting in the long term loss of 6 AUMs of livestock forage and an additional 2 AUMs of forage due to dust damage to vegetation.

*Environmental Consequences of the No Action Alternative:* There will be no change from the present situation

*Mitigation:* A 20 foot cattle guard with a gate next to it will be installed where the access road crosses the Greasewood drift fence in SENW Sec 9, T 1 S R 96 W. This cattleguard will be built and installed to BLM specifications which will be included in approval of this APD.

## REALTY AUTHORIZATIONS

*Affected Environment:* The lease is located north of Rio Blanco County Road 3 with access on a BLM road. The pipeline route is located adjacent to the proposed access road and connects to an existing, authorized line. XTO has both roads and pipelines in the area that are authorized under COC69027 (road) and COC69028 (pipeline). Other linear ROWs in the area are:

COC23293 Public Service Company  
 COC 37822 White River Electric  
 COC011902 Canyon Gas Resources

*Environmental Consequences of the Proposed Action:* The road and pipeline segments that are off lease would require authorization by amendment to the existing ROWs. The off-lease access road will be 33,250 feet long and the off-lease pipeline will be 10,650 feet long if it ends in section 21 as mapped. The permanent width of each ROW would be 35 feet. Use of the road as a working space for the pipeline would result in an aggregate disturbed area of approximately 50 feet. The permanent ROW for the road would add 26.72 acres, more or less, to COC69027. The pipeline would add 8.56 acres, more or less, to COC69028. The proponent should coordinate with Rio Blanco County for any necessary permits including road use. The proponent should also notify affected existing linear ROW holders.

*Environmental Consequences of the No Action Alternative:* If the action is not approved, there would be no impacts.

*Mitigation:* The proponent should proceed with application for amendments to existing ROW grants to authorize the access road and pipeline and should not begin construction until the authorizations are issued. The proponent should comply with all state and local governmental regulations and permit requirements.

## **RECREATION**

*Affected Environment:* The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). 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 area has been delineated a Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM). SPM physical and social recreation setting is typically characterized by a natural appearing environment with few administrative controls, low interaction between users but evidence of other users may be present. SPM recreation experience is characterized by a high probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

*Environmental Consequences of the Proposed Action:* The public will lose approximately 10 acres of dispersed recreation potential while the well is in operation. The public will most likely not recreate in the vicinity of these facilities and will be dispersed elsewhere. If action coincides with hunting seasons (September through November) it will most likely disrupt the experience sought by those recreationists.

With the introduction of new well pad and road, an increase of traffic could be expected increasing the likelihood of human interactions, the sights and sounds associated with the human environment and a less naturally appearing environment.

*Environmental Consequences of the No Action Alternative:* No loss of dispersed recreation potential and no impact to hunting recreationists.

*Mitigation:* None.

## **VISUAL RESOURCES**

*Affected Environment:* The proposed action would be located in an area with a VRM III classification. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

*Environmental Consequences of the Proposed Action:* The proposed action would not be visible to a casual observer traveling on RBC 5 (Piceance Creek Road), which would be the closest paved route that would be utilized. Seasonal big game hunters would be able to view the proposed action from ridge tops across the Dry Fork drainage. A recent wildfire consumed most of the vegetation, but the reseeded area has begun the regeneration process. Grasses and lower forb species are present. Scattered stands of pinyon/juniper remain that were not destroyed by the wildfire. The proposed location would be situated below the crest of the ridge on the north facing slope in burned stands of pinyon/juniper trees. By painting all production facilities juniper green to mimic the remaining vegetation and the future surrounding vegetation and eventually repeat the basic elements of color and form, the level of change to the characteristic landscape would be less than moderate, and the objectives of the VRM III classification would be retained.

*Environmental Consequences of the No Action Alternative:* There would be no environmental impacts.

*Mitigation:* All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

**CUMULATIVE IMPACTS SUMMARY:** Cumulative impacts from oil and gas development were analyzed in the White River Resource Area PRMP/FEIS. Current development, including the actions proposed in this EA, has not exceeded the foreseeable development analyzed in the PRMP/FEIS.

## **REFERENCES CITED:**

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CDPHE-WQCC, 2006b. "Status of Water Quality in Colorado – 2006, The Update to the 2002 and 2004 305(b) Report," April 2006.

CDPHE-WQCC, 2006c. "Regulation No. 93, 2006 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs," effective April 30.

CDPHE-WQCC, 2006d. "Regulation No. 94, Colorado's Monitoring and Evaluation List," effective April 30.

Colorado Oil and Gas Conservation Commission (COGCC). Reclamation Regulations. Accesses online at: [http://oil-gas.state.co.us/RR\\_Asp/1000-ser.pdf](http://oil-gas.state.co.us/RR_Asp/1000-ser.pdf). Accessed July 2006.

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

## **PERSONS / AGENCIES CONSULTED:**

**INTERDISCIPLINARY REVIEW:**

<b>Name</b>	<b>Title</b>	<b>Area of Responsibility</b>
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Mark Hafkenschiel	Rangeland Management Specialist	Invasive, Non-Native Species, Vegetation, Rangeland Management
Lisa Belmonte	Wildlife Biologist	Migratory Birds
Lisa Belmonte	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species, Wildlife
Melissa Kindall	Hazmat Collateral	Wastes, Hazardous or Solid
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Lisa Belmonte	Wildlife Biologist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Nate Dieterich	Hydrologist	Soils
Lisa Belmonte	Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert J. Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Linda Jones	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Keith Whitaker	Natural Resource Specialist	Visual Resources

# **Finding of No Significant Impact/Decision Record (FONSI/DR)**

## **CO-110-2006-233-EA**

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE:** The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

**DECISION/RATIONALE:** It is my decision to

**MITIGATION MEASURES:**

1. The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter. Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour. Disturbed areas will be restored to original contours, and revegetated with a BLM preferred seed mixture. Following seeding, woody debris cleared from the ROW will be pulled back over the pipeline to increase effective ground cover and help retain soil moisture.
2. Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.
3. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:
  - whether the materials appear eligible for the National Register of Historic Places
  - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)

- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

4. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with 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), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

5. The operator will be required to monitor the project area for a minimum of five years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

6. 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 such birds (e.g., migratory waterfowl, shorebirds, wading birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, 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 activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

7. It is requested that the permanent combined right-of-way width be minimized to the extent practical from RBC 3 north 16,000 feet (3 miles) by using the access road as part of the pipeline working surface.

8. It is requested that the operator voluntarily agree to conditions whereby employees and any personnel associated with subcontractors refrain from possessing firearms or dogs on the job.

9. Traffic associated with well development, production, and maintenance activities would be limited to speeds of less than 35 miles per hour. Posting and enforcement of these speed limits or the installation of speed deterrents would be the responsibility of the operator.

10. Through the life of the well, subsequent well and pipeline maintenance activities that occur between March 1 and July 15 should strictly avoid the periods of 0.5 hour before sunrise to 2 hours after sunrise, and 1 hour before sunset to sunset. All vehicular access to the well and pipeline, including snowmobile and ATV use, shall remain on designated access roads.

11. In those areas that are composed predominantly of shrubs, woody debris cleared from the road and pipeline corridor should be redistributed uniformly across the pipeline corridor after final recontouring and seeding operations are complete.

12. Due to extent and distribution of habitat modification and anthropogenic features impinging on occupied sage-grouse habitats, development of the access, well, and pipeline (including well completion activities) would not be allowed between March 1 and July 7.

13. The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

14. Surface Water: The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or [Nathan\\_Dieterich@blm.gov](mailto:Nathan_Dieterich@blm.gov). Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

15. The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the BLM Authorized Officer is required within 45 days of the APD approval date to indicate that the US Army Corps of Engineers has been notified prior to construction or that 404 Permits have been obtained or are not required by the permitting agency. Written documentation may be a copy of the Pre-Construction Notification (PCN) Form or an official verification letter from the US Army Corps of Engineers to the operator stating that a permit has been issued or is not required for the activities in question. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or [Nathan\\_Dieterich@blm.gov](mailto:Nathan_Dieterich@blm.gov). Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

16. To mitigate additional soil erosion at the well pad and potential increased sediment and salt loading to nearby surface waters, all disturbed areas affected by drilling or subsequent operations, except areas reasonably needed for production operations, shall be reclaimed as early and as nearly as practicable to their original condition and shall be maintained to control dust and minimize erosion (COGCC). To allow optimal opportunity for interim reclamation of well pads, all tanks and production facilities will be situated on the access road side of the well pad (unless otherwise approved by the WRFO-BLM Area Manager). Reclamation efforts on all pipelines will be final. Interim reclamation of well pads and final reclamation of pipeline right of ways (ROW) will commence as follows:

- Debris and waste materials other than de minimus amounts, including, but not limited to, concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe and cable,

as well as equipment associated with the drilling, re-entry or completion operations shall be removed (COGCC).

- Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.
- Stockpiled topsoil will be seeded with a BLM approved seed mixture. Topsoil stockpiles that will potentially remain in place for extended periods of time (e.g. multi-well locations) will be covered with biodegradable fabrics such as (but not limited to) jute netting or Curlex and seeded with the appropriated seed mixture.
- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
- Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces affected by pipeline/road construction, drilling or subsequent operations, except areas reasonably needed for production operations. Areas on *well pads* not needed for production operations shall be partially reshaped as early and as nearly as practicable to near pre-construction contours. Pipelines will be recontoured to pre-construction contours as soon as construction activities cease.
- The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in recontouring/partial-reshaping efforts.
- Recontoured/partially-reshaped areas will be seeded with a BLM approved seed mixture, and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex...) to provide additional protection to topsoil, retain soil moisture, and help promote desired vegetative growth.
- Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured/partially-reshaped areas to act as flow deflectors and sediment traps. Available woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
- The operator will be responsible for excluding livestock grazing from all reclaimed portions of *well pad*. To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced wooden corners will be constructed around all reclaimed portions of the well pad including cut and fill slopes following placement of woody debris (unless otherwise instructed by the BLM).
- The operator will be responsible for achieving a reclamation success rate of sufficient vegetative ground cover from reclaimed plant species within three growing seasons after the application of seed. The ground cover of reclaimed seed species shall be at a Potential Natural Community (PNC) state in relation to the seed mix as deemed appropriate by the BLM. Rehabilitation efforts must be repeated if it is concluded that the success rate is below an expectable level as determined by the BLM.

17. Upon final abandonment of the well pad, new access road, and completion of pipelines, 100% of all disturbed surfaces will be restored to pre-construction contours, and revegetated with a BLM preferred seed mixture. Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative (straw bails, woody debris, straw waddles, biodegradable fabrics...) techniques. All available woody debris will be pulled back over recontoured areas (woody debris will not account for more that 20% of total surface cover)

to help stabilize soils, trap moisture, and provide cover for vegetation. Monitoring and additional reclamation efforts will persist until reclamation is proven successful (as determined by the BLM).

18. In addition to the above stipulations, cut and fill slopes will be promptly seeded and covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex...). Because of the vulnerable state of the affected soils, silt fences will be *properly* installed at the base of the fill slope. Straw waddles will be positioned in the affected drainages down gradient of all surface disturbing activities to provide additional soil stabilization. Finally, excess large woody debris cleared from the proposed well pad location and ROW will be positioned in drainage ways, adjacent to disturbed sites, and perpendicular to flow in attempts to dissipate runoff intensity, trap sediment, and prolong the life of sediment retention structures constructed by the BLM in 2004.

19. Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment shall be used to intercept such contaminants prior to infiltrating soils and contaminating ground water. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

20. As outlined in the White River ROD/RMP, All surface disturbing activities encountering “fragile soils” will be allowed only after an engineered construction/reclamation plan is submitted by the operator and approved by the Area Manager. The following items must be addressed in the plan:

- How soil productivity will be restored
- How surface runoff will be treated to avoid accelerated erosion such as riling, gullyng, piping, and mass wasting.

The operator will be responsible for segregating topsoil material and backfilling of topsoil in its respective original position (last out, first in) to assist in the reestablishment of soil health and productivity. Erosion and sediment control measures will be installed on all slopes exceeding five percent to mitigate soil loss. Erosion and sediment control measures will be maintained until stream banks and adjacent upland areas are stabilized.

Mud blading will be prohibited and all activity shall cease when soils or road surfaces become saturated to a depth of three inches (on BLM administered lands) unless otherwise approved by the AO. All disturbed surfaces will be restored to natural contours and revegetated with a BLM approved seed mixture. Interim reclamation will follow the mitigation outlined in the Water Quality portion of this document.

21. Promptly revegetate all disturbed areas with Native Seed mix #3. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed. Seed

mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application.

Seed Mix #	Species (Variety)	Lbs. PLS per Acre	Ecological Sites
3	Western wheatgrass (Rosanna)	2	Gravelly 10"-14", Pinyon/Juniper Woodland, Stony Foothills, 147 (Mountain Mahogany)
	Bluebunch wheatgrass (Secar)	2	
	Thickspike wheatgrass (Critana)	2	
	Indian ricegrass (Nezpar)	1	
	Fourwing saltbush (Wytana)	1	
	Utah sweetvetch	1	
	Alternates: Needle and thread, globemallow		

22. If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities.

23. The use of interim reclamation techniques will be used to the extent practicable on the pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) all disturbed areas are reseeded and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads). In the event newly constructed access roads on BLM surface are no longer needed for well maintenance or development the roads will be recontoured to original grade.

24. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO).

Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

25. A paleontological monitor shall be present any time it is necessary to excavate into the underlying rock formation to construct/upgrade the access road, level the well pad, excavate the

reserve/bloolie pit or bury the well tie pipeline a paleontological monitor shall be present for all such excavations.

26. A 20 foot cattle guard with a gate next to it will be installed where the access road crosses the Greasewood drift fence in SENW Sec 9, T 1 S R 96 W. This cattleguard will be built and installed to BLM specifications which will be included in approval of this APD.

27. The proponent should proceed with application for amendments to existing ROW grants to authorize the access road and pipeline and should not begin construction until the authorizations are issued. The proponent should comply with all state and local governmental regulations and permit requirements.

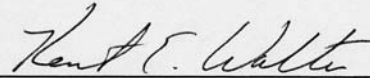
28. All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

**COMPLIANCE/MONITORING:**

**NAME OF PREPARER:** Keith Whitaker

**NAME OF ENVIRONMENTAL COORDINATOR:** Caroline P. Hollowed

**SIGNATURE OF AUTHORIZED OFFICIAL:**



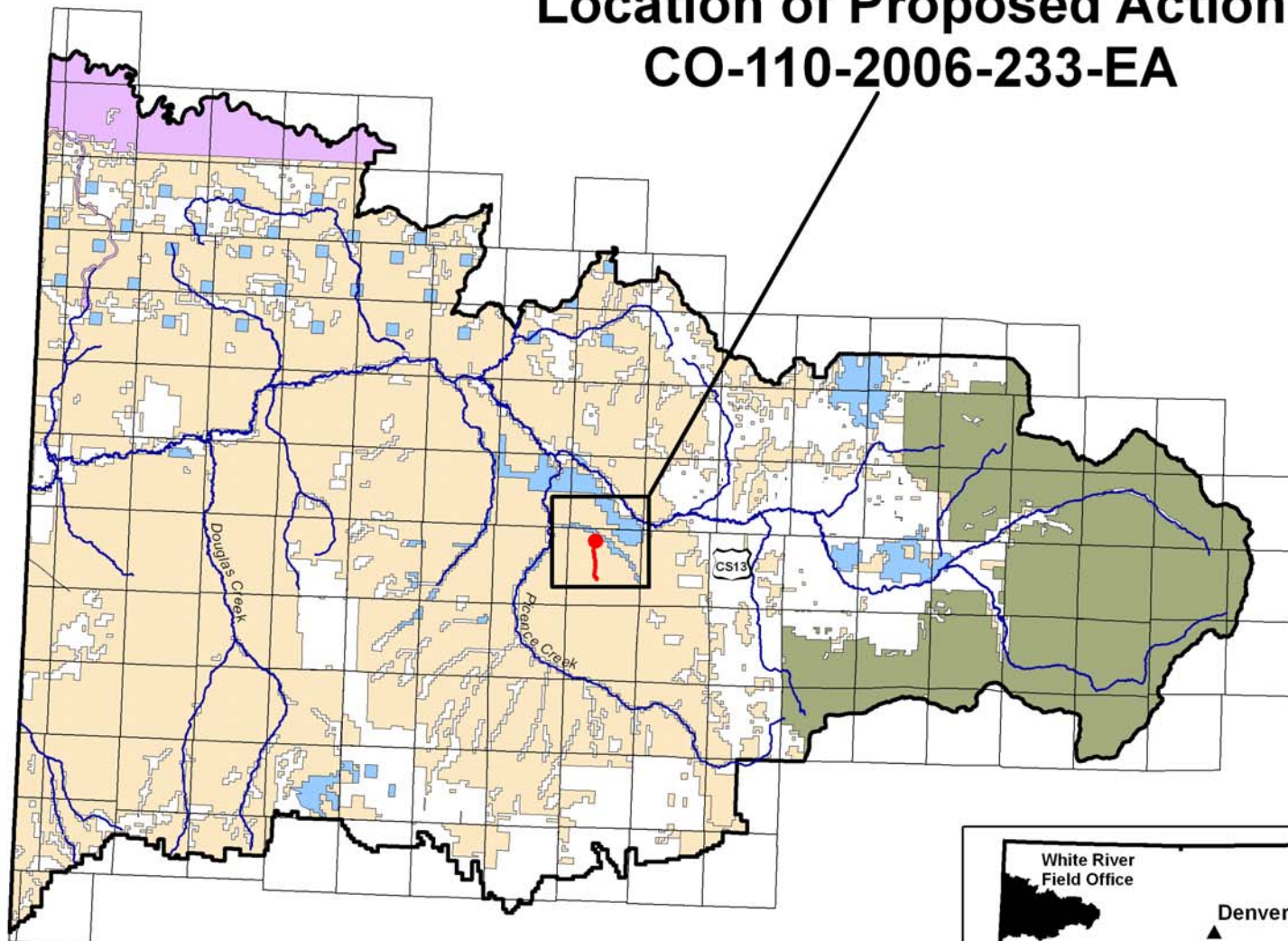
Field Manager

**DATE SIGNED:**

10/25/06

**ATTACHMENTS:** General Location Map of the Proposed Action

# Location of Proposed Action CO-110-2006-233-EA



0 5 10 20 Miles

