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

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-049-EA

CASEFILE/PROJECT NUMBER:

- Application for Permit to Drill well 8802B at location B26 397 - Lease C-57969
- Planned two wells at location A23 397 - Lease C-57969
- Planned two wells at location N35 397 - Lease C-57972
- Planned two wells at location D11 497 - Lease C-65564
- Planned two wells at location E10 497 - Lease C-65564
- Planned two wells at location A15 497 - Lease C-65562

PROJECT NAME: EnCana Eureka/Double Willow Exploration – Scandard Ridge

LEGAL DESCRIPTION: Sixth Principal Meridian, Colorado
T3S, R97W, Sec. 23, 26, 35
T4S, R97W, Sec. 10, 11, 15

APPLICANT: EnCana Oil & Gas (USA) Inc.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Proposed Action: This environmental assessment (EA) addresses the environmental impacts of drilling well 8802B B26 397 on the applicant's Federal oil and gas lease C-57969 on Scandard Ridge, between Willow Creek on the west and Scandard Gulch on the east (Figure 1). An Application for Permit to Drill (APD) was submitted to BLM on November 23, 2005. By agreement between the applicant and BLM, other facilities planned by the applicant in the vicinity are included in the Proposed Action for this EA, although applications may not have been received yet by BLM. The project area defined for this EA extends from the point where the Scandard Ridge road rises out of Scandard Gulch in T3S, R97W, Sec.13 and runs south along the ridge about seven miles to the A15 497 well pad in T4S, R97W, Sec.15 (Figure 2). In addition to the 8802B B26 397 well, facilities planned for the project area include five other drill pad locations with their associated access roads and pipelines. The pipeline from each well pad would connect to the existing EnCana pipeline that runs along the ridge parallel to the road. Five of the drill pad locations would be on federal surface and mineral estate; one, the B26 397 location (well 8802B) would be on split estate. The facilities are described below.

All of the proposed or planned well pad sites were included in EnCana's on-site visits for Group G (May 21, 2004) or Group P (November 3, 2004). Total disturbance for the six well pads accessing federal minerals would be about 50 acres, including associated access roads and pipelines.

- Location B26 397 with one federal well: An APD for one well, 8802B B26 397 (T3S, R97W, NWNE Sec. 26), was submitted to BLM on November 23, 2005. During the on-site and survey of this location, it was referred to as the E-P014 location. The surface at this location is privately owned. A new 1,165-foot access road would be constructed directly to the pad. Gas produced at this location would be transported in a new pipeline 1,165 feet to a tie-in at the existing Scandard Ridge pipeline.

- Other locations in the project area which are planned for future drilling:

Well Pad Site	On-Site ID	Location	Length (in feet)	
			Access Road	Pipeline
A23 397	E-P011	T3S, R97W, NENE Sec. 23	660	660
N35 397	E-P027	T3S, R97W, SESW Sec. 35	1,035	1,035
D11 497	DW-P012	T4S, R97W, NWNW Sec. 11	1,830	1,830
E10 497	DW-P075	T4S, R97W, SENW Sec. 10	5,395	5,395
A15 497	DW-P021	T4S, R97W, NENE Sec. 15	530	530

- Road construction: New access roads would be built to each well pad (see table above for lengths). Road improvement and new road construction would initially disturb a total width of 60 feet; a 30-foot width would remain unvegetated for the long term.

- Pipelines: An existing natural gas gathering line traverses Scandard Ridge. New pipelines would be installed from each well pad to that gathering line in the same corridor that the new access roads would occupy (see table above for lengths). Construction of the new pipeline segments would create a surface disturbance up to 60 feet in width. After successful reclamation, the pipeline routes would be vegetated for the remainder of the project life.

Total initial disturbance for all well pad locations and pipelines is estimated at 50 acres –21 acres for well pads and 29 acres for well pad access roads and tie-in pipelines. Disturbance on public land is estimated at 44 acres. Following successful reclamation of the disturbed areas, long-term disturbance is estimated at 16 acres.

No Action Alternative: None of the proposed wells, well pads, access roads, or tie-in pipelines would be constructed.

Alternatives Considered but not Carried Forward for Analysis: Proposed well site A15 497 was originally located toward the center of the ridge. However, during the on-site visit, the well pad location was moved by BLM as much as topography allowed, minimizing disturbance of sagebrush and bald habitat. The well pad was moved into taller, denser mountain shrub habitat

less suited for sage grouse. Because the applicant agreed with the move, there is no need to further analyze the impact of developing the well site at the originally proposed location.

NEED FOR THE ACTION: All of the proposed or potential actions analyzed in this EA are being pursued by EnCana in order to exercise its federal mineral lease rights.

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: Pages 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."

The Proposed Action has been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3). The action conforms to the decisions/pages of the plan listed above.

Leases for all locations but the N35 397 have a stipulation protecting the oil shale resource. Leases for the D11 497, E10 497 and A15 497 well pads have Controlled Surface Use stipulations applicable on slopes in excess of 35 percent and Timing Limitations (April 15 to July 7) within two miles of a lek once more than ten percent of the habitat in that area has been disturbed. The lease for the A15 497 location has a No Surface Occupancy stipulation to protect BLM Sensitive plants in part of the lease area but not in the area where the well pad would be located.

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, the 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 project area is within a Class II Prevention of Significant Deterioration (PSD) air quality area. No Class I PSD areas are located within 40 miles of the project area.

The principal air quality parameter likely to be affected by construction of well pads, roads, and pipelines is the level of inhalable particulate matter, and specifically particles ten microns or less in diameter (PM_{10}) associated with fugitive dust. Although no monitoring data are available for the survey area, it can be surmised that the air quality is good because the Colorado Air Pollution Control Division (APCD) estimates the maximum PM_{10} levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be less than 50 micrograms per cubic meter ($\mu g/m^3$). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM_{10} (24-hour average) of 150 $\mu g/m^3$.

Environmental Consequences of the Proposed Action: The construction of the facilities proposed for the project area – well pads, pipelines, and access roads – would result in short-term, local impacts on air quality during and after construction, due to dust being blown into the air. However, airborne particulate matter would not exceed Colorado air quality standards on an hourly or daily basis. Following successful revegetation of the sites, airborne particulate matter should return to near pre-construction levels.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Dust abatement measures should be implemented as described in the APD's 13 Point Surface Use Plan.

To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. Interim reclamation will consist of excess stockpiled soil associated with pad construction being pulled back over the portion of the well pad not being utilized for production facilities and access. Portions of the well pad undergoing interim reclamation will be returned to grade (as close as possible), promptly re-seeded, and biodegradable fabrics will be utilized on slopes exceeding 5% (e.g. fill slopes).

If interim reclamation is not practical (e.g. when drilling operations would require an extended period of time for multiple wells on a single pad), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with a BLM approved seed mixture (see Vegetation section of this document).

Permitting of all regulated air pollution sources through the Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division, would assure compliance with all federal and state standards.

CULTURAL RESOURCES

Affected Environment: Well pads A23 397, B26 397, N35 397, D11 497, A15 497 and associated access roads and pipelines were inventoried at the Class III (100 percent pedestrian) level on May 5, 6, and 19, 2004 (Hall, 2004, Compliance Dated 5/28/ 2004)). No cultural resources were identified in the inventory area at these five locations. The well pads were identified in the cultural inventory as the Eureka P-011, Eureka P-014, Eureka P-027, Double Willow P-021 and Double Willow P-012 well pads.

Well pad E10 497 and its associated access road and tie-in pipeline were inventoried at the Class III (100 percent pedestrian) level on April 2, 2004 (Salisbury, 2004, Compliance Dated 4/15/2004). No cultural resources were identified in the inventory area at this location. The well pad was identified in the cultural inventory as the Double Willow #1, sec. 10, T4S, R97W well pad.

Environmental Consequences of the Proposed Action: Construction of the proposed well pads and associated access roads and tie-in pipelines would not impact any known eligible cultural resources.

Environmental Consequences of the No Action Alternative: None

Mitigation: 1. The operator is responsible for informing all persons associated with the project operations that they would be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. Should historic or archaeological materials be uncovered during any project or construction activities, the operator would immediately stop activities in the immediate area of the find that might further disturb such materials, and contact the authorized officer (AO). Within five working days, the AO would inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places;
- the mitigation measures the operator would likely have to undertake before the site could be used (assuming *in situ* preservation is not necessary); and
- 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 would assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator would be responsible for mitigation cost. The AO would provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator would 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), the holder must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

FLOOD PLAINS, WETLANDS, RIPARIAN ZONES, AND ALLUVIAL VALLEYS

Affected Environment: No flood plains, wetlands, riparian zones, or alluvial valleys would be encountered with construction of the well pads and access roads for well sites A23 397, B26 397, N35 397, D11 497, E10 497 and A15 497.

Environmental Consequences of the Proposed Action: No impacts would be expected to occur to any flood plain, wetland, riparian zone, or alluvial valley from the actions proposed.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Well pads A23 397 and B26 397 and their proposed access roads were inventoried for the presence of any noxious or invasive weeds on June 9, 2004. Well pads N35 397, D11 497 and A15 497 and their proposed access roads were inventoried for the presence of any noxious or invasive weeds on June 17, 2004. Well pad E10 497 and its access route were inventoried on November 3, 2004. Approximately 30 acres around each proposed well pad and along proposed access roads were inventoried. A minimum radius of 600 feet around the well pad stake and 50 feet on either side of the flagged access road was inventoried.

No noxious weed species were found within the areas inventoried. A few small areas around well pad B26 397 contain a heavy cheatgrass invasion, as a result of livestock shading under a few large pinyon trees.

Environmental Consequences of the Proposed Action: This general area of the Piceance Basin has infestations of houndstongue, musk thistle, yellow toadflax, leafy spurge, black hensbane and spotted knapweed, all of which are being treated by BLM, local ranchers and others. The disturbance associated with the Proposed Action could create a noxious weed problem by importing weed seed on vehicles and equipment or by creating suitable conditions (non-vegetated disturbed areas) for introduction of noxious weeds by other vectors. In addition to noxious weeds, invasive non-native species such as cheat grass could also establish on these areas. Establishment of noxious or invasive weeds would create problems through seed production in proportion to the number of plants and the duration of reproduction. Such increased seed production could foster aggressive competition with, or exclusion of, desired vegetation during reclamation, and could encourage the spread of these unwanted plants into adjacent native plant communities.

Environmental Consequences of the No Action Alternative: None

Mitigation: Any invasive, non-native plants should be eliminated before any seed production has occurred. Eradication should make use of materials and methods approved in advance by the Authorized Officer.

The operator would clean all off-road equipment to remove seed and soil prior to commencing operations on public lands within the project area.

Other mitigation is included in the Vegetation section.

MIGRATORY BIRDS

Affected Environment: The sagebrush, pinyon/juniper, and mountain shrub communities found within the project area support a large array of migratory birds that nest during the months of May, June and July. Bird populations associated with these communities that have a high conservation interest (i.e., Rocky Mountain Bird Observatory, Partners in Flight program) are listed in the following table. No specialized or narrowly endemic species are known to occupy the project area.

Birds of High Conservation Priority by Habitat Association

Sagebrush	Pinyon/juniper	Mountain shrub
Brewer's sparrow, Green-tailed towhee	Pinyon jay, black-throated gray warbler, Juniper titmouse, gray flycatcher, violet-green swallow	Blue grouse, Virginia's warbler

Proposed well sites and their associated access roads along with the pipeline gathering system will all be located on the flatter portions of the ridge between Scandard Gulch and Willow Creek, which are tributaries to Piceance Creek. The proposed development will occur at elevations between 7,100 feet on the north and 7,900 feet on the south. The access route and primary collection pipeline will parallel an existing grass-covered pipeline corridor.

Environmental Consequences of the Proposed Action: Construction of well pads and their associated access roads and pipelines will occur within mountain and Wyoming sagebrush, mountain shrub and pinyon/juniper habitats. A total of approximately 50 acres of habitat will initially be removed during well pad, road, and pipeline construction. In the long term, approximately 16 acres would likely remain disturbed. Construction during the migratory bird-nesting season (May through July) would be disruptive and nests could be lost. Typically, one pair of high-interest bird species occurs per hectare (~2.5 acres). Recent studies suggest that nesting density tends to be reduced by 50 percent in close proximity (within 300 feet) of roads. Although the Proposed Actions would represent an incremental and longer term reduction in Wyoming and mountain sagebrush, pinyon/juniper, and mountain shrub habitats, implementation of the Proposed Actions would have no measurable influence on the abundance or distribution of breeding migratory birds at larger landscape scales.

The development of reserve pits in the project area may be expected to attract waterfowl and other migratory birds for purposes of resting, foraging, or as a source of free water. Recent

incidents of migratory waterfowl (i.e., teal and gadwall) coming into contact with fluids stored in reserve pits during or after completion operations and suffering mortality are a 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. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with produced water and drilling and completion fluids which may pose a problem (e.g., acute or chronic toxicity, compromised insulation).

Environmental Consequences of the No Action Alternative: None

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 bird 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 bird use two weeks prior to beginning completion activities. 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 Engineering Technician immediately.

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

Affected Environment: The area of the Proposed Action includes no federally listed animal species and no habitat for such species. The special status species of concern in the project area include two Colorado BLM Sensitive Species: greater sage grouse and northern goshawk.

The potential for goshawks is low in the project area as preferred habitat is spruce/fir or spruce/fir mixed with aspen in the Piceance Basin. Rarely have goshawks been known to nest in mature pinyon/juniper woodlands. However, over the past 30 years, 4 nests have been found in mature mid-level pinyon/juniper woodlands at elevations as low as 6,500 feet. Based on these instances, the birds tend to site their nests in large, contiguous tracts of mature woodland deep (500 or more feet) in stand interiors. Although woodland habitat occurs on the northern two-thirds of Scandard Ridge, sagebrush flats, chained areas and existing pipeline corridors have resulted in fragmentation of any large, continuous blocks of mature pinyon/juniper woodland habitat. The contribution of pinyon/juniper woodlands to the distribution, abundance, and population viability of the goshawk is thought to be of small consequence. As discussed in the Terrestrial Wildlife Section, mature pinyon/juniper woodlands surrounding the access roads, the main collector pipeline corridor and well locations covered in this analysis were surveyed for raptor nesting during the spring and summer months of 2004. No evidence of goshawk nesting or presence was found.

The southern portion of the project area, including wells D11 497, A15 497, and E10 497, occurs within the overall range for the greater sage grouse. Suitable sage grouse habitat on this portion of Scandard Ridge is generally limited to the top of the main ridge and several smaller side ridges. The side slopes are tall, dense mountain shrub and pinyon/juniper woodland habitats, both of which are considered unsuitable for sage grouse. Well site D11 497 is located on the east

side of Scandard Ridge in a mountain shrub habitat and well site E10 497 is located in open, mature pinyon/juniper and sagebrush with many younger trees encroaching on the area. Both sites are encompassed by former sagebrush-dominated habitat that is presently in an advanced success ional state (i.e., pinyon/juniper and mountain shrub expression). These locations are presently isolated from suitable and occupied sage grouse habitat and known leks by dense mountain shrub habitat. It is important to note that these vegetation-based barriers may be targeted for treatments that can expand the continuity and suitable extent of sage-steppe habitat for sage-grouse recovery. These tracts of unsuitable habitat are key to redeveloping a habitat base that can recover and sustain a viable sage-grouse population.

Well site A15 497 provides suitable sage grouse habitat. It is located on a small knob in a mosaic of mountain sagebrush, low-growing mountain shrubs, and open bald habitat (an area of low-growing grasses/forbs). This site is on the northern fringe of habitat currently suited for occupation by grouse. Although no sage grouse sign was noted on the area during the on-site visit of May 27, 2004, the site is similar to knobs across the Roan Divide on which evidence of sage grouse use is typically found. During the on-site visit, the well pad location was moved as much as topography allowed, minimizing disturbance of sagebrush and bald habitat. The well pad was moved into taller, denser mountain shrub habitat less suited for sage grouse. The closest leks (Willow Peak 1 and 2) are located approximately 1.3 miles to the south on the divide between East Willow Creek and West Fork Stewart Gulch. No activity was noted on either lek during aerial surveys conducted in the spring of 2005.

Environmental Consequences of the Proposed Action: All mature pinyon/juniper woodland habitat suitable for raptor nesting adjacent to proposed access routes and well locations was surveyed in 2005 with the exception of well site E10 497. No evidence of goshawk nesting was found and the potential appears to be very low. With the completion of surveys for other raptors (see Terrestrial Wildlife Section) confirming the absence of goshawks, no impact to goshawks would occur. The construction of well location A15 497 and the associated access road and pipeline would remove about five acres of sage grouse habitat and increase the level of disturbance on the surrounding area.

With the exception of the 5 acres associated with the A15 497 pad, which lies on the margin of occupied and suitable habitat, the present character of habitat offered by the remainder of the project area is largely unsuited for sage-grouse use. Considering the rate of successional processes in these communities, it is unlikely that these habitats would regain functional utility as sage-grouse habitat over the productive life of these wells (e.g., 20 years).

Environmental Consequences of the No Action Alternative: None.

Mitigation: Refer to the Terrestrial Wildlife Section for additional raptor surveys to minimize impacts to nesting raptors.

Construction and drilling at well site A15 497 should be restricted during the sage grouse nesting season, April 1 to July 7. Avoiding this period would most effectively eliminate the destruction or abandonment of sage grouse nests. On public land, this restriction would apply to the NW¼ of sections 15 T4S R97W.

In addition to moving the A15 497 well pad location, an existing two-track road leading to the pad from the existing pipeline corridor should be ripped, seeded, and effectively closed to further vehicle traffic to help compensate for construction of a new access route.

It is unlikely that the existing roadbed to the E10 497 location is sited advantageously with regard to long-term utility of restored sage-grouse habitat. This access will be reevaluated prior to construction and will be subject to realignment that minimizes involvement and bisecting of suitable sagebrush habitat (i.e., maximizes continuity of ridgeline habitat). This alignment should also incorporate considerations for the placement of a gate (see Terrestrial Wildlife section) that will effectively deter vehicular traffic that is not directly associated with well development or maintenance (i.e., including other permitted public land users). It is intended that this gate remain locked at all times (excepting operations that require frequent heavy truck traffic, e.g., drilling, completion, and work-over operations). The applicant will be responsible for installing and maintaining this gate until final abandonment of the road.

The use of interim reclamation techniques will be used to the extent practicable on all pads such that: 1) all available topsoil material would be used on recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities will be located in such a way that the surface disturbance available for effective interim reclamation is maximized (e.g., where access road enters the pad), and 3) all disturbed areas outside the deadman anchors will be recontoured to the extent practicable and those areas seeded with the recommended seed mix once well completion activities have been finalized or at the direction of the Authorized Officer. (See Vegetation section.)

Any future noxious weed control should be conducted by hand application of herbicides to avoid unnecessary involvement and mortality of sagebrush and forbs while controlling noxious plants.

Finding on the Public Land Health Standard for Threatened & Endangered species (partial): All suitable raptor-nesting habitat to be impacted by the project has been or will be surveyed to ensure that nesting will not be disrupted. The standard with regard to the goshawk would be met. Conditions of Approval attached to this action are designed to maintain habitat utility in the event goshawks happen to nest in adjacent stands of mature woodland. These measures would ensure that the Proposed Action would remain consistent with continued meeting of the standards for special status animals.

The project is within the overall range for sage-grouse and suitable habitat would be removed by construction of one well location and associated road and pipeline. That removal would be largely mitigated in the long term by the reclamation measures described above. On the edge of suitable sage grouse habitat where serviceberry dominates and on balds, the establishment of mountain sagebrush has the potential to improve conditions for sage grouse. Throughout the Eureka/Double Willow project area, the standard with regard to the greater sage-grouse is expected to be satisfied by mitigation for grouse or grouse habitat to be developed by BLM and the Colorado Division of Wildlife. Greater sage-grouse mitigation developed for these units would be in addition to mitigation developed for other oil and gas development areas within the Piceance Basin.

THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES

Affected Environment: Well pads A23 397 and B26 397 and their proposed access roads were inventoried for the presence of any threatened, endangered or sensitive plant species on June 9, 2004. Well pads N35 397, D11 497 and A15 497 and their proposed access roads were inventoried on June 17, 2004. Well pad E10 497 and access/pipeline route were inventoried on November 23, 2004. Approximately 30 acres around each proposed well pad and along proposed access roads were inventoried. A minimum radius of 600 feet around the well pad stake and 50 feet either side of the flagged access road was inventoried.

The proposed pipelines from the well pads to the trunk line were within the areas inventoried for the proposed access roads. Surface geology of the areas inventoried is derived from the Uinta Formation, which is not potential habitat for any special status plants. No surface outcrops of the Green River Formation, which is potential habitat, were present within the area inventoried. No threatened, endangered, or sensitive plant species were found within the areas inventoried.

Environmental Consequences of the Proposed Action: No impacts would be expected to occur to any threatened, endangered, or sensitive plant species from the actions proposed.

Environmental Consequences of the No Action Alternative: No impacts would be expected.

Mitigation: None

Finding on the Public Land Health Standard for Threatened & Endangered species (partial): Public lands in the project area currently meet the standard and would continue to meet the standard after implementation of the proposed action.

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: None.

Mitigation: The operator will be required to collect and properly dispose of any solid wastes generated by the Proposed Action.

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

Affected Environment: Surface Water. Well pads B26 397, A23 397, N35 397, D11 497, E10 497, A15 497, and associated access roads and gathering pipelines are located along Scandard Ridge. Project features lie within the Willow Creek drainage, which is a perennial tributary to perennial Piceance Creek, a tributary of the White River that ultimately flows into the Colorado River. It should be noted that Willow Creek was identified in the White River RMP/ROD as a perennial stream suitable for in-stream flow surveys. Under the White River RMP/ROD the potential cold-water fishery combined with existing high priority riparian values met criteria for listing Willow Creek as suitable for in-stream flow surveys. Water quality standards and guidance for drainages within the Lower Colorado River Basin are included in the CDPHE WQCC Regulation No. 37 (2004a).

Willow Creek is listed as the mainstem of Willow Creek from the source to its confluence with Piceance Creek and is included in Segment 17 of the White River. Segment 17 has use designations of aquatic life cold 2, recreation 2, and agriculture, with a use-protected aquatic designation. Recreation Class 2 designation is for streams where primary contact recreation does not exist and cannot be reasonably expected to exist in the future, regardless of water quality. Willow Creek is designated recreation class 2 due to its limited access.

The "Status of Water Quality in Colorado – 2004" (CDPHE, 2004b) was reviewed for information related to the project area drainages. White River Segment 17 (which includes Willow Creek) was noted to have fully supporting aquatic life cold 2, fully supporting recreation 2, and fully supporting agriculture designated uses. White River Segment 17 has a Colorado integrated reporting category of 1, which is described as "fully supporting for all uses, all uses have been assessed and all uses are fully supporting the designated uses."

Newly promulgated Colorado Regulations Nos. 93 and 94 (CDPHE, 2004c and 2004d) were reviewed for information related to the project area drainages. Regulation No. 93 includes the State's list of water-quality-limited segments requiring Total Maximum Daily Loads (TMDLs). The 2004 list of segments needing development of TMDLs includes one segment within the White River – segment 9b – White River tributaries North & South Forks to Piceance Creek, specifically the Flag Creek portion (for impairment from selenium with a low priority for TMDL development).

Regulation 94 includes 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 five White River segments that are potentially impaired: 9, 12, 13a, 21, and 22. Segment 17 (Willow Creek) is not listed.

A United States Geological Survey (USGS) stream gauging station is located on Willow Creek above the confluence with Piceance Creek. This gauging station was operated continuously from 1974 to 1985 and intermittently from 1987 to 1998 (USGS, 2004). A variety of field measurements and analytical laboratory data are available for this site. Several of the field measurements, including temperature, flow, specific conductance, and pH, have been selected to characterize Willow Creek and are described in the table below. Water quality information is

available at various times of the year; spring and fall data have been selected to show seasonal variations.

Summary of Flow Information at Willow Creek Gauging Station

	Spring Conditions				Fall Conditions			
	Temp (ºC)	Flow (cfs)	SpC (µS/cm)	pH (s.u.)	Temp (ºC)	Flow (cfs)	SpC (µS/cm)	pH (s.u.)
Average	10	2.8	1298	8.4	12.2	2.3	1348	8.3
Minimum	3	0.05	1170	7.9	5.3	0.17	1210	7.9
Maximum	15	5.7	1590	9.7	23	6.8	1470	8.5

Notes: *Spring conditions include 24 measurements, typically from April. Fall conditions include 22 measurements, typically from September.*

Abbreviations: *Temp – temperature, ºC – degrees Celsius, SpC – specific conductance, µS/cm – microsiemens per centimeter, and s.u. – standard units.*

Ground Water: The project area is located within the Piceance Basin whose primary ground-water resource is the alluvium of the Colorado River and major tributaries (Topper et al., 2003). Saturated Tertiary rocks in the basin are comprised of two primary units: the Upper and Lower Piceance Basin aquifers, which are separated by the Mahogany confining unit. Information presented in Topper et al. (2003) indicates the following approximate depths to potentiometric surfaces within hydrogeologic units: upper Piceance Basin aquifer 600 feet, lower Piceance Basin aquifer 700 feet, and Mesaverde aquifer 400 feet (based on a surface elevation of 7,400 feet). Water well data from the Colorado Division of Water Resources (Topper et al., 2003) indicate that in central Rio Blanco County, water wells are not common in the Basin. Approximately half have a total depth less than 300 feet and approximately half greater than 300 feet. Dissolved solids concentration in the project area within both the Upper and Lower Piceance Basin aquifers is approximately 1,000 milligrams per liter. Primary hydrogeologic units within the Piceance Basin are listed in the following table.

Summary of Hydrogeologic Units

Hydrogeologic Unit	Thickness (feet)	Approx Avg. Depth (feet)	Conductivity (feet/day)	Yield (gpm)	Transmissivity (sq. feet/day)
Upper Piceance Basin aquifer	0-1,400	700	<0.2 to >1.6	1-900	610-770
Lower Piceance Basin aquifer	0-1,870	2,800	<0.1 to >1.2	1-1,000	260-380
Mesaverde aquifer	Averages 3,000	7,700	Not listed	Not listed	Not listed

gpm – gallons per minute

Source: Topper, et al. (2003).

Environmental Consequences of the Proposed Action: Surface Water. The primary potential water quality impact would be from additional sediment generated by construction of

the proposed access roads, drill pads, and gathering pipelines. Depleting the vegetation cover needed to protect watersheds from precipitation and runoff could increase both short-term erosion and sedimentation delivery to the White River watershed. Runoff-producing storm events could increase sediment loads in ephemeral channels. Depending on the soils affected, salt content in the sediment could also degrade water quality.

The magnitude of these impacts is dependent on the amount of surface disturbance and the climatic conditions during the time the soils are exposed to the elements. With proper installation, monitoring, and maintenance of storm water BMPs and physical barriers where needed, impact on water quality in Willow Creek should be limited.

Ground Water: No impact on groundwater resources is anticipated. Shallow aquifers are protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. The objective of surface and intermediate casing is specifically to case off and isolate shallow aquifers. Hydrofracturing used to stimulate natural gas production of the Mesaverde Formation is anticipated to extend a maximum of 500 feet horizontally from each well bore and not vertically. Any groundwater produced from the Mesaverde Formation would be hauled off and disposed of because of its poor water quality and would therefore be prevented from adversely impacting surface water.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Oil and gas development activities require a stormwater discharge permit from the Colorado Department of Public Health and Environment, Water Quality Control Division, for construction associated with well pads, pipelines, roads and other facilities. As a condition of the permit, a Stormwater Management Plan (SWMP) will be developed showing how Best Management Practices (BMPs) are to be used to control runoff and sediment transport. The applicant is required to have a copy of the SWMP on file with the Meeker Field Office and to implement the BMPs in that plan as on-site conditions warrant. To mitigate surface erosion at the well pad, interim reclamation will be required as outlined in the Air Quality mitigation section above.

The White River Record of Decision and Approved Resource Management Plan (July, 1997) includes a list of standard Conditions of Approval to be applied to All Surface Disturbing Activities (COAs 1-12) and to Road Construction and Maintenance (COAs 13-62). The applicant is required to be familiar with those standard COAs and to implement them as on-site conditions warrant.

Finding on the Public Land Health Standard for water quality: Water quality in the stream segments within the project area meets the criteria established in the standard. With successful reclamation, the proposed and potential actions in the project area would not change this status.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED

No prime and unique farmlands, wild and scenic rivers, Areas of Critical Environmental Concern, or wilderness exist within the project area. No Native American religious or environmental justice concerns are 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 soil types in the project area occur from 6,000 to 8,900 feet in elevation. The average annual precipitation in the project area is 14 to 22 inches, the average annual temperature is 37 to 45 degrees F, and the average frost-free period is approximately 80 to 105 days. The proposed pad construction, access road construction, and pipeline construction activities would occur within four soil units inventoried by the Natural Resources Conservation Service (NRCS). Soil units, names, and characteristics are listed in the following table:

Summary of Project Area Soil Units

Soil Map Unit	Soil Unit Name	Slope (%)	Ecological Site	Effective Rooting Depth (in.)	Runoff	Erosion Potential	Bedrock Depth (in.)
15	Castner channery loam	5-50	Pinyon/Juniper Woodland	10-20	Medium to rapid	Moderate to very high	10-20
36	Glendive fine sandy loam	2 - 4	Foothills Swale	> 60	Slow	Slight	> 60
58	Parachute loam	25-75	Brushy Loam	20-40	Medium	Very high	20-40
70	Redcreek-Rentsac complex	5 - 30	Pinyon/Juniper Woodland	10-20	Medium	Moderate to high	10-20
73	Rentsac channery loam	5-50	Pinyon/Juniper Woodland	10-20	Rapid	Moderate to very high	10-20
87	Starman-Vandamore complex	5-40	Dry Exposure	10-40	Medium	Moderate to high	10-40

Soil unit information from SCS (2004) Rio Blanco County.

Castner channery loam, Parachute loam and Starman-Vandamore complex soil units have listed salinity values of less than 2 mmhos per centimeter. Redcreek-Rentsac complex and Rentsac channery loam soil units have listed salinity values of less than 4 mmhos per centimeter. All of the soil units but Glendive fine sandy loam indicate the potential for a fragile soil with listed slope ranges that exceed 35 percent, the criteria that would trigger implementation of a Controlled Surface Use stipulation.

Environmental Consequences of the Proposed Action: Pipeline, access road, and well pad construction would remove surface cover and disturb soils, thus potentially increasing soil erosion and reducing soil health and productivity. Actions considered in this analysis and their potential to produce soil disturbance are as follows:

1. Access for the proposed pipelines and well pads is from the existing ridge road. The road is in generally acceptable condition and no improvements other than maintenance and possibly

gravel placement are anticipated. Therefore, no new soil disturbance due to road improvement is anticipated.

2. The proposed A23 397, B26 397, N35 397, D11 497, E10 497, and A15 497 well sites would each have an initial disturbance of 3.1 to 3.5 acres; 1.2 to 1.4 acres at each site would remain unvegetated for the life of the project.
3. Access roads to the six well sites total an estimated 10,600 feet. The analysis assumes that gathering lines would be constructed next to the roads and that they would have a combined initial disturbance width of up to 120 feet and a 30-foot unvegetated width for the life of the well. Total disturbance for road and pipeline construction would be as much as 29 acres.

The majority of the well pads and access roads are located on BLM land. The B26 397 well pad, access road, and pipeline are located on private land. The following table presents estimated soil disturbance that would occur on BLM and private surface

Soil Disturbance on Private and BLM Surface

Facility	Rio Blanco Soil Unit						Total Area (acres)
	15	36	58	70	73	87	
New Pad Access Roads with Co-located Pipeline							
Feet	8,250	1,165		660	540		
Acres	22.7	3.2		1.8	1.5		29.2
Well Pads							
Acres	7.0		3.5	6.6		3.5	20.6
Total Area							
Acres, Total	29.7	3.2	3.5	8.4	1.5	3.5	49.8
Acres, BLM	29.7		3.5	5.3	1.5	3.5	43.5

The total area of disturbance on BLM surface over all soil units is estimated at 43.5 acres, over two-thirds of which is for the pipelines. After successful reclamation, an estimated 16 acres would remain in an unvegetated state for the life of the project (30-40 years) or longer.

The majority (80 percent) of soil disturbance on BLM surface occurs within the Castner channery loam and Rentsac channery loam that have listed slope ranges of 5 to 50 percent, medium to rapid runoff, and moderate to very high erosion potential. The lease for the E10 497 and D11 497 well pads has a Controlled Surface Use stipulation calling for an engineered construction plan on fragile soils on slopes over 35 percent. Although the Castner and Rentsac channery loams would qualify for protection of this stipulation, the proposed access routes and well pad for the E10 497 and D11 497 locations are on slopes less than ten percent and hence would not be affected by the stipulation. In general, the proposed well pads and access routes are located on low slopes and the affected soil units would thus have runoff and erosion potential at the low end of their listed ranges. The steepest slope occurs near the D11 497 well pad and is estimated to be about 25 percent.

The very same soil types that would be disturbed by construction of project facilities lie down gradient from the proposed facilities. Two additional soil units, Torriorthents-Rock outcrop complex (91) and Irgul-Parachute complex (43) also lie down gradient of the potential disturbance. Both soil units exhibit high erosion potential. While much of the disturbance is on relatively modest slopes, the down gradient slopes tend to be steeper and could be subject to increased erosion if water flow from uphill disturbances is not managed properly. Best Management Practices are typically selected and installed not only to control erosion and off-site migration of sediment from disturbed areas but also to avoid erosion in downstream areas. This may be done through use of BMPs such as silt fence, which typically does not concentrate runoff water, and water diversion berms, which are installed on spacing that depends on slope and soil type and are intended to release runoff water from disturbed areas in a controlled manner. BMPs that may collect, retain, and release runoff from a central location (i.e. settling pond or culvert) may need downstream erosion protection such as vegetation, rock armoring, or other stabilization materials. The specification, function, inspection, and maintenance BMPs are covered by the storm water management plan and conditions of the storm water discharge permit (see mitigation for Water Quality).

Environmental Consequences of the No Action Alternative: None.

Mitigation: See recommended mitigation for Water Quality regarding a Stormwater Management Plan and standard COAs.

Segregation of topsoil material and replacement of topsoil in its respective original position (last out, first in) would assist in the reestablishment of soil health and productivity.

Finding on the Public Land Health Standard for upland soils: Soils within the area of the Proposed Action meet the criteria established in the standard for upland soils. With successful reclamation, the Proposed Action would not change this status.

VEGETATION (includes a finding on Standard 3)

Affected Environment: Vegetation age and composition varies from well site to well site as described below. Estimated vegetation cover from major species or groups of species is noted in the table below.

Well Pad A23 397**:** The well pad and access road occur in an old pinyon/juniper chaining area that was once a mature woodland. These trees were chained 40+ years ago, which resulted in a tremendous release of young pinyon and juniper trees. This young stand is increasing in canopy cover, resulting in decreased sagebrush and herbaceous species. Understory vegetation is mostly Wyoming sagebrush with a considerable amount of bare ground between plants. Annual air-dry vegetation production is estimated at 250-400 lbs/acre.

Well Pad B26 397: The access road traverses a pinyon/juniper woodland ecological site to the well pad, which would be built in a Wyoming sagebrush park. Most of the well pad is in a rolling loam ecological site with annual air-dry vegetation production estimated at 500-600 lbs/acre. Annual air-dry vegetation production in the pinyon/juniper woodland is estimated at 300-500 lbs/acre.

A few small areas contain a heavy cheatgrass invasion at the well pad, due to livestock shading under a few large pinyon trees.

Well Pad N35 397: The access road and well pad are in a pinyon/juniper woodland. The site appearance is an open stand of young pinyon trees (75 to 150 years of age) with a mature shrub cover in the interspaces. Shrub cover is dense with 7-10 foot serviceberries and 3-5 foot Wyoming sagebrush with a suppressed herbaceous understory. Annual air-dry vegetation production is estimated at 600-700 lbs/acre.

Well Pad D11 497: The access road and well pad are in a pinyon/juniper woodland. The site appearance is an open stand of pinyon trees (150 to 200 years of age) with a mature shrub cover in the interspaces. Shrub cover is dense with 7-10 foot serviceberries and 3-5 foot Wyoming sagebrush with a suppressed herbaceous understory. Annual air-dry vegetation production is estimated at 600-700 lbs/acre.

Well Pad A15 497: The well pad and short access road are in a mountain sagebrush and serviceberry plant community, with a grassland plant community immediately adjacent. The well pad and short access road are in a loamy slopes ecological site. Annual air-dry vegetation production is estimated at 600-800 lbs/acre. A dry exposure ecological site (grassland) is immediately adjacent to the well pad but would not be disturbed.

Well Pad E10 497: The access road and well pad are in a pinyon/juniper woodland. The site appearance is an open stand of young pinyon and juniper trees (75 to 150 years of age) with a mature shrub cover in the interspaces. Areas of dense shrub cover with scattered pinyon trees are interspersed along the access road and at the well pad location. Wyoming sagebrush, serviceberry, and antelope bitterbrush are equally dominant shrubs in the area. Annual air-dry vegetation production is estimated at 600-700 lbs/acre.

Plant Species	Well Pad	Well Pad	Well Pad	Well Pad	Well Pad	Well Pad
Pinyon/Juniper	25-30 %	5-30 %	10-15 %	5-10 %	----	5-15 %
Sagebrush	15-20 %	20-25 %	20-25 %	20-25 %	20-25 %	15-20 %
Serviceberry	< 1 %	2-5 %	15-20 %	10-15 %	5-10 %	10-15 %
Bitterbrush	< 1 %	< 1 %	< 1 %	2-5 %	2-5 %	10-15 %
Snowberry	< 1 %	2-5 %	2-5 %	2-5 %	-----	< 2 %
Native grasses	5-10 %	5-20 %	5-10 %	5-10 %	20-25 %	10-15 %
Native forbs	2-5 %	2-10 %	5-10 %	5-10 %	10-15 %	5-10 %
Cheatgrass	-----	< 2 %	-----	-----	-----	-----
Bare ground	35-40 %	15-30 %	15-20 %	20-25 %	15-25 %	15-25 %

Environmental Consequences of the Proposed Action: Construction of the six well pads and access roads and the trunk pipeline would remove all vegetation on disturbed areas. An area of approximately eight acres at the six well pads could remain non-vegetated for a considerable length of time depending upon the success and life expectancy of the wells on the six sites. A portion of each well pad and its access roads could be reclaimed during the gas production phase. Half or more of the original disturbance could be short-term and returned to the production of

desirable perennial vegetation. The remaining disturbance would remain non-vegetated for the life of the wells.

Disturbances associated with the proposal would be subject to an invasion of very competitive weedy plants, some native and some not, potentially creating problems for future reclamation efforts. At least two growing seasons are generally required for these species to develop sufficient seed for dominance of the disturbance. The longer it remains non-vegetated, the greater the chance for invasion. Once the disturbance becomes dominated by weedy species, reclamation with desirable native perennial species becomes very difficult. What should be a short-term impact could become a long-term invasion requiring additional resources and strategies before successful reclamation can be achieved.

Loss of shrub species and pinyon/juniper from disturbed sites would be a long-term impact resulting from initial removal of all vegetation. Sagebrush would be expected to begin re-establishment on disturbed areas within 10 years, with pre-disturbance levels achieved within 20 to 25 years. Deciduous shrub species (serviceberry, oakbrush, and bitterbrush) would be expected to take 15 to 20 years to begin re-establishment, and 40 to 50+ years to achieve pre-disturbance levels. The pinyon or juniper trees removed by disturbance would be a long-term loss. It would be likely to take at least 40 to 50 years for trees to begin appearing on the disturbed sites and over 100 years to achieve pre-disturbance levels.

Environmental Consequences of the No Action Alternative: None

Mitigation: All disturbed areas for the pipelines and well pads, with the exception of the access road travel surface area around production facilities, will be reclaimed within the first growing season or prior to the first full growing season following disturbance. Interim reclamation will consist of excess stockpiled soil associated with pad construction being pulled back over the portion of the well pad not being utilized for production facilities and access. Portions of the well pad undergoing interim reclamation will be returned to grade (as close as possible), promptly re-seeded, and biodegradable fabrics will be utilized on slopes exceeding 5% (e.g., fill slopes). All available topsoil material will be used on recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation); production facilities will be located in such a way that the surface disturbance available for effective interim reclamation is maximized (e.g., where access road enters the pad), and; all disturbed areas outside the deadman anchors will be recontoured to the extent practicable.

If interim reclamation is not practical (e.g. when drilling operations would require an extended period of time for multiple wells on a single pad), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with the BLM-approved seed mixture below.

All reclaimed areas will be reseeded with the following seed mix:

Recommended Seed Mix

SPECIES	VARIETY (CULTIVAR)	PLS/AC
Grasses		
Slender Wheatgrass	San Luis	1.0 lbs
Bluebunch Wheatgrass or Beardless Bluebunch	Goldar or Anatone Whitmar	2.0 lbs
Thickspike Wheatgrass	Critana	1.0 lbs
Indian Ricegrass	Rimrock	2.0 lbs
Western Wheatgrass	Rosana	2.0 lbs
Forbs		
Utah Sweetvetch		1.0 lbs
Scarlet Globemallow		0.5 lbs
Cicer Milkvetch		1.0 lbs
Sainfoin or American Vetch		1.0 lbs
Shrubs		
Antelope Bitterbrush		1.0 lbs
Mountain Mahogany		1.0 lbs
Four-wing Saltbush	Wytana	1.0 lbs
TOTAL		14.5 lbs

**Pure Live Seed per Acre*

Successful revegetation should be achieved within three years. The operator would be required to monitor the project site(s) for a minimum of three years post-construction to detect presence of noxious/invasive species. Any such species would be eradicated using materials and methods approved in advance by the Authorized Officer.

Final reclamation of roads and well pads following abandonment would be achieved with the native seed mix noted above.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): The plant communities within the area of the Proposed Action have an appropriate age structure and diversity of species which meet the criteria established in the standard for vegetation. With successful reclamation, the Proposed Action would not change this status.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: There is no aquatic wildlife within the project area.

Environmental Consequences of the Proposed Action: None.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): Because there is no aquatic wildlife within the project area, the standard is not applicable.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The six wells and associated access roads and pipelines are located on the top of Scandard Ridge. Scandard Ridge lies on the east side of the Willow Creek drainage and extends for approximately eight miles. The ridge slopes to the north dropping in elevation from 7,900 to 6,600 feet. On the north portion of the ridge, pinyon/juniper woodland and sagebrush are the primary habitat types. Pinyon/juniper is encroaching on most sagebrush areas, whereas past chaining has converted some pinyon/juniper to sagebrush. Generally, large mature pinyon/juniper occurs on the steep slopes and in side draws dropping off the top of the ridge. On the southern portion of the ridge mountain shrub habitat is most prominent with young pinyon/juniper encroaching on many areas. The entire ridge falls within elk winter range with all but the northern three miles considered a winter concentration area. Well site A23 397 is the only well location not occurring within the concentration area. Only the southernmost mile of the ridge, including well site A15 497, falls within mule deer summer range. The remainder of the area is mule deer winter range, although none of the area is severe winter range. All of the location looked at on this ridge contained significant sign of deer and elk use in the form of tracks and pellet groups. The five northern well sites located on deer winter range currently provide a combination of good shrub species for foraging and hiding cover. Access to the ridge is controlled by private landowners in the area.

Raptor nesting habitat in the area occurs in mature pinyon- juniper woodland as no suitable cliff-nesting habitat is present along the slopes of Scandard Ridge. The southern 2½ miles of the pipeline corridor, including well sites D11 497 and A15 497, occur in shrub habitat that provides little structure for raptor nesting.

Well site A23 397 is located in an old chaining that removed mature trees from the area. To the west and within ¼ mile, very large mature pinyon/juniper trees occur along the canyon rim and side slopes. This area was surveyed for nesting raptors on July15, 2004. No evidence of raptor nesting was found, but the very large and dense trees provide excellent nesting habitat for accipiters and owls.

Well sites B26 397 and N35 397, along with the pipeline route that parallels the existing Trans Colorado pipeline between the two well sites, contains scattered large pinyon/juniper trees and many smaller encroaching trees. The well site areas and pipeline corridor were surveyed for evidence of raptor nesting on either May 27 or July 16, 2004. No evidence of raptor nesting was noted and the areas are considered marginal nesting habitat due to the scattered nature of larger trees.

Well site E10 497 and the access route occur in a mix of pinyon/juniper woodland and sagebrush habitats. Scattered larger trees occur along portion of the access route and at the well locations. This site was only visited during the on-site on November 3, 2004 and no thorough raptor nest survey has been completed. The two-track road to this location is little more than an ATV trail at this time.

Environmental Consequences of the Proposed Action: The construction of six well locations and their associated roads and pipelines would remove a total of 50 acres of deer and elk foraging and hiding habitat. The upgrading of existing ATV trails would increase the length of improved road on the ridge by about one and a half miles (see sage-grouse discussion). Although the increase in roads is most significant at well site E10 497, habitat utilized by deer and elk and foraging raptors would be impacted along five miles of the main ridge top.

Well pad and access road construction would remove habitat considered marginal for raptor nesting at well sites E10 497, B26 397, N35 397 and the pipeline corridor between the latter two of these locations. Construction during the nesting season at well site A23 397 could disturb raptor nesting active in adjacent suitable nesting habitat.

Environmental Consequences of the No Action Alternative: No additional disturbance of wintering big game associated with commercial oil and gas development, or net loss of habitat to winter range, would occur at this time. Potential raptor nesting habitat would neither be removed nor possibly disturbed during the nesting period.

Mitigation: The fact that vehicle access is privately controlled in this area limits the amount of increased disturbance likely to occur to big game outside natural gas activity. Placement of gates on the access roads to well sites D11 497 and E10 497 would provide the greatest benefit in reducing disturbance to big game animals on new areas.

Including browse species in the seed mix for revegetation of all disturbed areas would help reduce the loss of foraging habitat for deer and elk. Bitterbrush, mahogany, and four-wing saltbush should be included in seed mixtures at all locations except A15 497.

Raptor nest surveys are recommended at well site E10 497 and along its access route prior to construction and drilling, as no surveys have been completed to date (N½NE and S½NW section 10, T.4S R.97 W). The area west of well site A23 397 should be resurveyed if construction or drilling would occur during the nesting season (March 15 to August 15) for raptors of concern at this location (NWNW S23, T3S, R97W).

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): This project would not jeopardize the viability of any animal population. It would have no significant consequence on terrestrial habitat condition, utility, or function, nor have any discernible effect on animal abundance or distribution at any landscape scale. The public land health standard would thus be met.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those checked in the last column will be addressed further in this EA.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access & Transportation			X
Cadastral Survey	X		
Fire Management			X

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access & Transportation			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: Principal access to the project area is via the established road up Willow Creek, then a short distance up Scandard Gulch, and then along Scandard Ridge to the southernmost well pad, A15 497 (Figure 2). The roads are located on both public lands administered by BLM and on private property; however, critical access from Rio Blanco County Road 5 is gated and strictly controlled. The road up Scandard Gulch is designated BLM Road 1009; the road up Scandard Ridge is not numbered. Use of the portions of the roads that are on public land would be authorized under the APDs as appropriate. For much of its length along Scandard Ridge, the road is located in a corridor that, in addition to a surface pipeline, has two buried natural gas pipelines, a third buried line that has recently been authorized, and a BLM grazing allotment water pipeline.

The entire Proposed Action would occur within an area where motorized vehicle traffic is limited to existing roads from October 1 to April 30 each year. Cross-country motorized vehicle travel is allowed from May 1 to September 30 as long as no resource damage occurs as a result.

Environmental Consequences of the Proposed Action: Construction and operation of gas wells and associated access roads and pipelines at the planned A23 397, B26 397, N35 397, D11 497, E10 497, and A15 497 sites would cause a temporary increase in traffic up the road for a period of two to four months at each site – perhaps up to 24 months overall if only one drill rig were used. After that, well service traffic to the six sites would be regular but of low intensity. The presence of multiple pipelines in the corridor used by the Scandard Ridge access road creates the potential for pipeline damage if the surface is disturbed. The risk of damage would be minimized by a requirement that no blading would occur on the roadway in the pipeline corridor and that road improvements would be limited to placing additional surfacing material (gravel) on the existing road alignment.

New access roads to the six well pads would have no impact on access to public lands since the pads are near existing roads and two-tracks and do not greatly improve off-road access; however, with each new permitted road development, the potential for avocation trail/road development increases as well.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Road construction and maintenance standards and procedures would be implemented as described in the APD's 13 Point Surface Use Plan.

No blading would occur on the roadway in the pipeline corridor. Road improvements would be limited to placement of additional surfacing material (gravel) on the existing road alignment.

FIRE MANAGEMENT

Affected Environment: The actions proposed occur within the D5 Cathedral/Roan Plateau fire management polygon, an area that has minimal constraints on the use of naturally occurring wildfire to achieve public land health objectives. This fire management polygon is an area where wildland fire is desired and there are few constraints on its use.

The proposed A23-397, N35-397, D11-497, and E10-497 well pads involve approximately 1.7 miles of road and pipeline construction and/or road improvement and about 14 acres of drill pad clearing for an approximate total of 26.5 acres of disturbance in pinyon/juniper and mixed mountain shrub stands.

The National Fire Plan calls for "firefighter and public safety" to be the highest priority for all fire management activities. In the pinion, juniper, and brush types common on the White River Resource Area, roads and other man-made openings are commonly used as fuel breaks or barriers to control the spread of both wildland and prescribed fires. By reducing the activity fuels created from this proposal, future fire management efforts in this area should be safer for those involved and more effective.

Environmental Consequences of the Proposed Action: Constructing the roads, pipelines and well pads will not change the management of fire in the D5 polygon. The proposed action will require the removal of a substantial amount of woody vegetation (approximately 10-20 tons/acre). Due to the existing tree cover of pinion and juniper, there will be a need for the operator to clear some of these trees. If not adequately treated, these trees will result in elevated hazardous fuels conditions and remain on-site for many years. These accumulations of dead material are very receptive to fire brands and spotting from wind driven fires and can greatly accelerate the rate of spread of the fire front. The roads associated with this project may be used by the general public for a variety of uses, including access for firewood gathering, hunting and other dispersed recreational activities. Increased public use of an area will nearly always result in an increased potential for man-caused wildland fires. If not treated, the slash and woody debris will create an elevated hazardous dead fuel loading that could pose significant control problems in the event of a wildfire/ wildland fire use event. Additionally there would be greater threat to the public, EnCana personnel/contractors, and fire management personnel.

Development of the oil and gas facilities with appropriate mitigation would not be expected to affect BLM's ability to use naturally occurring wildfires to achieve public land health objectives for the plant communities in the general area.

Environmental Consequences of the No Action Alternative: None

Mitigation: Fire avoidance and prevention measures would be implemented as described in the APD's 13 Point Surface Use Plan.

The operator has two options for treatment of slash from this project. 1) A hydro-ax or other mulching-type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size. The mulch is evenly scattered across the surface and effectively breaks down the woody fuel thereby eliminating any hazardous fuel load adjacent to the new road and well pad. 2) The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the disturbed area, the material should be evenly scattered, so as to not create jackpots, and the material should not exceed five-tons /acre.

FOREST MANAGEMENT

Affected Environment: The N35 397 and D11 497 wells and much of the pipeline are within mature pinyon/juniper woodlands. These stands are considered commercial, based on quality, production and accessibility. The E10 497 well pad and access road are within a mountain browse site that has encroaching pinyon/juniper woodlands. Within the White River ROD/RMP, a limit of 25 acres per year for clearcutting of woodlands is permitted. These stands are also used by the local population as a source of firewood and fence posts, and are authorized under personal use permits. Overall, these stands are considered healthy in that insects and disease agents are maintained at levels that do not impact the stands.

Environmental Consequences of the Proposed Action: Under the proposed action, 6.8 acres of woodland would be removed. The volume of material removed is estimated at 103 cords. The removal of woodland resources is within that amount established in the land use plan. Following reclamation, pinions and junipers are expected to reoccupy the site and develop into mature woodlands. Establishment is expected to take up to 30 years with mature woodlands developing in 250+ years. With the mitigation listed below, problems with disease/insects would be avoided.

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

Mitigation: The applicant will be billed for the forest materials removed as described by the proposed action. Forestry concurs with mitigation proposed by fire management. This would also decrease the opportunity for an outbreak of pine beetle.

GEOLOGY AND MINERALS

Affected Environment: The surficial geology in the project area is the shallow dipping Tertiary Uinta Formation within the Green River Formation (Tweto, 1979). The Green River Formation is comprised of organic-rich shaley limestone, shale, marlstone, and sandstone, and is rich in fish, insect, and plant fossils. The Green River Formation contains very substantial amounts of "oil shale" which is actually a kerogen-rich marlstone (Foutz, 1994). Other mineral resources in the project include gas, coal, and nahcolite. EnCana's targeted zone for all the wells is in the Mesaverde. During drilling, potential water, oil shale, coal, oil, and gas zones would be encountered from the surface to the targeted zone. Fresh water aquifers zones that are encountered in the Green River formation are the A-Groove, B-Groove and Dissolution Surface. These zones along with portions of the upper Wasatch can be lost circulation zones during drilling. There is also potential for a perched aquifer to exist in the Uinta formation. This area is identified in the ROD/RMP as available for underground oil shale leasing and development. Well pad A23-397 is also in an area identified as available for sodium leasing.

Environmental Consequences of the Proposed Action: The cementing procedure of the Proposed Actions isolates the formations and, if properly done, would prevent the migration of gas, water, and oil between formations. The coal zones located in the Mesaverde would also be isolated during this procedure. These zones are at a depth greater than 3,000 feet and the coal is not recoverable by conventional methods. Development of these wells would deplete the hydrocarbon resources in the targeted formation. Depending on the number of additional wells, future development of underground mining of the oil shale in and around existing wells may be limited.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

NOISE

Affected Environment: The roads up Willow Creek, Scandard Gulch, and Scandard Ridge are generally the primary sites of man-made noise within the Scandard Ridge project area. Traffic up and down the roads to oil and gas facilities on Scandard Ridge and Trail Ridge produces some small amount of noise sporadically during the day, with very little noise during the night. There is one part-time residence within the project area. Other than the temporary residents of the area, those people subject to noise generated in the project area are, for the most part, employees of the oil and gas companies. Ranchers and hunters, in season, are also subject to noise generated in the area.

Environmental Consequences of the Proposed Action: Well pad construction and well drilling would generate noise for two to four months at each site. The Colorado Oil and Gas Commission has established a noise limit of 55 decibels (dBA) as the limit for oil and gas facilities in residential areas. (This can be compared to average highway noise of 60 dBA at 100 feet.) The 55 dBA limit would be reached at 1,500 feet from a well pad construction site and at 800 feet from an operating drill rig, although the rig would be operating 24 hours a day for the

period of drilling (USDI BLM, 2004). Local winds and terrain could cause that distance to vary considerably in different parts of the project area and at different times.

Environmental Consequences of the No Action Alternative: None

Mitigation: None.

PALEONTOLOGY

Affected Environment: The proposed well pads, road realignment, and pipeline construction are all located in an area mapped as the Uinta Formation (Tweto, 1979). BLM has classified the Uinta as a Condition I formation, meaning that it is a known producer of scientifically significant fossils.

Environmental Consequences of the Proposed Action: Since the actions proposed in the project area would all occur within the Uinta formation, there is potential for impacting fossil resources if it is necessary to excavate into the underlying rock formation to construct the well pads, including the reserve/blooie pit, to construct or upgrade the access roads, or to install the pipelines.

Environmental Consequences of the No Action Alternative: None

Mitigation: All exposed rock outcrops in the project area would be examined by an approved paleontologist with a report detailing the results of the inventory; any mitigation recommendation would be submitted to the BLM prior to the initiation of construction on any of the well pads, or road/pipeline right-of-way. A monitor would be present at any time that it becomes necessary to excavate into the underlying bedrock formation in order to bury pipelines, level well pads, excavate reserve/blooie pits, or to construct any project features.

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.

RANGELAND MANAGEMENT

Affected Environment: The six well pads and associated access roads and gathering lines occur within MTW Ranch's grazing use area of the Piceance Mountain grazing allotment. The ranch is permitted to run cattle on this allotment from May through mid-November each year. The six well pads occur within two pastures that are grazed from May through mid-July and again in October and November.

Rangeland Improvements: A water storage tank is located in the NE¼NW¼ of section 2, T4S, R97W. (UTM NAD83 12S,735716E, 4402080N). The storage tank sits on the east side of the existing road up Scandard Ridge. A water line crosses to the west side of the road to a watering trough directly across from the storage tank. The line is about 18 inches deep and gravity feeds the nearby trough as well as two more troughs near locations B26 397 and N35 397. The access roads to B26 397 and N35 397 also cross the water line. All crossing points would require padding in sufficient depth to protect the line from crushing or breaking.

A pasture fence crosses the existing road between locations D11 497 and N35 397 and would require a cattleguard. The fence is located near the section line between section 35, T3S, R97W and section 2, T4S, R97W.

Environmental Consequences of the Proposed Action: The actions proposed would result in a forage loss to livestock of about 7 to 10 animal unit months (AUM). An AUM equates to the forage needs of a mature cow with calf for one month. Most of this loss would be only short-term until successful reclamation of disturbed areas could occur. Reclamation of the pipeline and unused portions of the roads and well pads would likely offset the short-term forage loss (creating about 6-7 AUMs of available forage in the short term).

Long-term loss of about 3 AUMs would occur for the life of the project assuming all six pads would have productive wells. Complete reclamation of the roads, pipeline, and well pads would probably provide a small long-term increase above the present forage available to cattle.

The actions proposed could interfere with proper functioning of nearby range improvements. The fences and watering facilities are necessary for control of cattle to achieve grazing objectives on the allotment. Damage to fences or watering facilities or gates left open would interfere with control of cattle and ultimately, proper utilization of the rangeland resource. These impacts would be greatest during the construction and drilling phases. EnCana will be responsible for any and all damage to the described waterline, which was functioning properly as of 9/20/05.

Environmental Consequences of the No Action Alternative: None.

Mitigation: The access road up Scandard Ridge crosses a waterline in the NE¼NW¼ of section 2, T4S, R97W (UTM NAD83 12S, 735716E, 4402080N). Access roads to locations B26 397 and N35 397 also cross a water line between the existing road and the TransColorado pipeline. All crossing points would require padding over the line in sufficient depth to protect the line from crushing or breaking.

A pasture fence crosses the existing road between locations D11 497 and N35 397. The fence is located near the section line between section 35, T3S, R97W and section 2, T4S, R97W. The

crossing would require a cattleguard constructed to BLM specifications with a wire or metal gate adjacent to it. The adjacent gate could not be placed over the water line that parallels the road on the west side. The cattleguard and gate will be installed prior to access road and location construction. The effectiveness of the fence would be maintained at all times during construction and operation.

REALTY AUTHORIZATIONS

Affected Environment: The main access route for activities within the project area would be the road up Willow Creek and Scandard Ridge. The applicant holds a right-of-way across the portion of the road that crosses BLM in Willow Creek (COC66509). The use of the road on public land up Scandard Ridge, and any improvements to that road, is part of the Proposed Action included in the APDs for the well pads. The existing surface pipeline adjacent to the ridge road is authorized under a BLM right-of-way grant COC67956.

Environmental Consequences of the Proposed Action: Use of the road along Scandard Ridge would not require a right-of-way grant but would be authorized under the APDs.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

RECREATION

Affected Environment: The Proposed Action would occur 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 Scandard Ridge project area most closely resembles the Recreation Opportunity Spectrum (ROS) class of Roaded Natural (RN). RN settings are characterized by a generally natural environment with evidence of rural residences and agricultural land uses. Resource manipulations are noticeable and are harmonious with the natural environment, but substantial modifications may be encountered. Such an area provides about equal opportunities for interaction with other visitors and to experience isolation from the sites and sounds of man.

Recreation use in the project area is low. No legal public motorized access into the Scandard Ridge project area is available and physical access is strictly controlled. What recreation activity there is occurs primarily during big game hunting season. All public lands in the project area south to the Garfield County line are included in a Special Recreation Permit held by MTW Ranch. Most hunting that occurs in the area would take place under the control of the ranch, which controls the gated access off Piceance Creek.

Environmental Consequences of the Proposed Action: The public would lose very little dispersed recreation potential as a result of project activities since access to the area is strictly controlled. The quality of the recreation experience for those who do have access to the area would be diminished by the project. If drilling or well pad construction coincides with hunting

season (September through November), it would most likely disrupt the experience sought by those recreationists.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

SOCIOECONOMICS

Affected Environment: The Proposed Action would be developed in Rio Blanco County, but construction and drilling resources would also be drawn from Garfield County and Mesa County. The population of Rio Blanco County was 6,063 in 2002, almost unchanged from the 1990 level of 6,051. The major communities in the county are Meeker (population 2,272 in 2002) and Rangely (2,108 in 2002). The county underwent substantial economic and demographic growth in the late 1970s and early 1980s as major energy companies attempted to develop oil shale as a national energy fuel source. After a decline in jobs and population from the boom levels, the number of jobs and people in the county has remained static. Currently, the government sector makes up almost a third of all jobs in the county. The traditional farming and ranching sector has been supplemented in the last few years by a growing number of jobs in the oil and gas extraction industry as drilling activity has expanded. Many of the resources for development of oil and gas come out of Garfield County or Mesa County and locate in Rio Blanco County on only a temporary basis.

Other than natural gas exploration and development, livestock grazing is the only major economic activity that currently takes place within the project area. MTW Ranch holds a BLM Special Recreation Permit to provide guide and outfitting services in the project area.

Environmental Consequences of the Proposed Action: The employment required for construction of the facilities in the Scandard Ridge project area would most likely not be new, but would use workers already available in the area. Some may very well reside in other western Colorado counties. Motels, restaurants, grocery stores, gas stations, and vehicle and equipment repair shops may all experience additional activity. The facilities developed by the Proposed Action would expand the local property tax base and the gas produced by the proposed wells would generate increased federal royalties. Half of those royalties would be returned to the State of Colorado and to jurisdictions within Colorado, including Rio Blanco County. The net effect of these impacts would be considered beneficial but low.

No economic impact on the grazing operations of MTW Ranch is expected. The ranch is unlikely to experience diminished outfitting revenue in the near term, but that revenue may be at risk in the long term. Continued construction, drilling, and maintenance activities could force big game to disperse and thus reduce hunting success.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

VISUAL RESOURCES

Affected Environment: Most of the project area is on public lands administered by BLM. The BLM lands in this area have received a VRM Class III designation. The management goal for this class is to partially retain the existing character of the landscape. The change brought about by activities on lands with VRM III designation may be evident. The visual contrast may be moderate but should not dominate the natural landscape character. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Visual sensitivity in the area is low because access to the area is limited. Additionally, distance and intervening terrain shield the area from the most highly traveled route in the area, the Piceance Creek Road (CR 5). Local ranchers, a growing number of oil and gas company employees and contractors, and a few recreationists during hunting season make up the potential viewing public.

Environmental Consequences of the Proposed Action: The six proposed well pads, with their associated access roads and pipelines, would alter the landscape character. Removal of vegetation and recontouring of the natural surface during construction would introduce linear features into the landscape and offer contrasting soil and vegetation colors and patterns that had not previously been there. This change would lessen in the long term as exposed areas were reclaimed and bare soil was not so extensively evident. Additionally, above-ground natural gas production facilities such as well heads, metering sheds, condensate tanks, and compressor facilities would introduce man-made industrial facilities that would draw attention due to their size, color, and shape. The use of natural, non-reflective paint tones would reduce the visual impact of the facilities.

Viewed from the middle-background, the changes in the overall landscape of the project area would appear to be moderate and would not dominate the natural character of the landscape since they would be dispersed over a fairly large area. The character of the landscape would be partially retained, meeting the standards of the VRM III classification.

Environmental Consequences of the No Action Alternative: None

Mitigation: All permanent (on-site for six months or longer) structures, facilities, and equipment placed on-site would be low profile and painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

Interim reclamation measures described in the Vegetation section would be implemented to reduce the color contrast.

CUMULATIVE IMPACTS SUMMARY: Cumulative impacts from oil and gas development were analyzed in the White River Resource Area ROD/RMP. Current development, including the actions proposed in the Willow Creek project area, has not exceeded the foreseeable development analyzed in the ROD/RMP.

REFERENCES CITED

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PERSONS / AGENCIES CONSULTED: None

INTERDISCIPLINARY REVIEW:

Project Team		
Name	**Title**	**Area of Responsibility**
BLM Oversight		
Keith Whitaker	Natural Resource Specialist	Project Lead; Visual Resource Management
Ed Hollowed	Wildlife Biologist	Migratory Birds; Threatened, Endangered and Sensitive Animal Species; Wildlife; Wetlands and Riparian Zones
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern; Threatened and Endangered Plant Species
Chris Ham	Outdoor Recreation Planner	Recreation; Wilderness; Access and Transportation
Mark Hafkenschiel	Rangeland Management Specialist	Vegetation; Invasive, Non-Native Species; Rangeland Management
Michael Selle	Archeologist	Cultural and Paleontological Resources
Nate Dieterich	Hydrologist	Air Quality; Water Quality, Surface and Ground; Hydrology and Water Rights; and Soils
Penny Brown	Realty Specialist	Realty Authorizations
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Marvin Hendricks	Petroleum Engineer	Wastes, Hazardous or Solid
Paul Daggett	Mining Engineer	Geology and Minerals
WestWater Engineering (Third Party Contractor)		
Dan McWilliams	Senior Engineer	Air Quality, Soils, Water Quality, Surface and Ground; Hydrology and Water Rights; Geology and Minerals
Metcalf Archaeological Associates	Archaeologist	Cultural Resources
Steve Moore	Environmental Scientist	Areas of Critical Environmental Concern; Paleontological Resources; Wastes, Hazardous or Solid; Access and Transportation; Wilderness; Realty Authorizations; Recreation; and Visual Resources
Rusty Roberts	Range Conservationist	Threatened and Endangered Plant Species; Invasive, Non-Native Species; Wetlands and Riparian Zones; Vegetation; Fire Management; Rangeland Management; and Wild Horses
Doug McVean	Wildlife Biologist	Migratory Birds; Threatened, Endangered and Sensitive Animal Species; Wildlife, Terrestrial and Aquatic
Mike Klish	Environmental Scientist	Forest Management

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

CO-110-2006-049-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment, analyzing the environmental effects of the Proposed Action, has been reviewed. The approved mitigation measures (attached to APDs as Conditions of Approval) for the Proposed Action – drilling of natural gas well 8802B and one other well at well pad B26 397 and potentially two wells each at locations A23 397, N35 397, D11 497, E10 497, and A15 497 – 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.

WestWater Engineering, an environmental consulting firm, with the guidance, participation, and independent evaluation of the Bureau of Land Management (BLM), prepared this document. The BLM, in accordance with 40 CFR 1506.5 (a) and (c), is in agreement with the findings of the analysis and approves and takes responsibility for the scope and content of this document.

DECISION/RATIONALE: It is my decision to approve drilling of natural gas well 8802B and one other well at well pad B26 397 and potentially two wells each at locations A23 397, N35 397, D11 497, E10 497, and A15 497, with the mitigation listed below. The Proposed Action is in concert with the objectives of the White River ROD/RMP in that it would allow development of federal oil and gas resources in a manner that provides reasonable protection for other resource values. Protection for other resource values will be assured by implementation of the mitigation measures described below and attached to the APDs as Conditions of Approval.

MITIGATION MEASURES:

1. Dust abatement measures will be implemented as described in the APD's 13 Point Surface Use Plan. To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. (See Mitigation Measure 16.)

2. Permitting of all regulated air pollution sources through the Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division, will assure compliance with all federal and state standards.

3. The operator is responsible for informing all persons associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. Should historic or archaeological materials be uncovered during any project or construction activities, the operator will immediately stop activities in

the immediate area of the find that might further disturb such materials, and 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 could be used (assuming *in situ* preservation is not necessary); and
- 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 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), the holder must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

5. Any invasive, non-native plants will be eliminated before any seed production has occurred. Eradication will make use of materials and methods approved in advance by the Authorized Officer.

6. The operator will clean all off-road equipment to remove seed and soil prior to commencing operations on public lands within the project area.

7. 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 bird 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 bird use two weeks prior to beginning completion activities. 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 Engineering Technician immediately.

8. Construction and drilling at well site A15 497 should be restricted during the sage grouse nesting season, April 1 to July 7. Avoiding this period would most effectively eliminate the destruction or abandonment of sage grouse nests. On public land, this restriction would apply to the NW¼ of sections 15 T4S R97W.

9. In addition to moving the A15 497 well pad location, an existing two-track road leading to the pad from the existing pipeline corridor should be ripped, seeded, and effectively closed to further vehicle traffic to help compensate for construction of a new access route.

10. It is unlikely that the existing roadbed to the E10 497 location is sited advantageously with regard to long term utility of restored sage-grouse habitat. This access will be reevaluated prior to construction and will be subject to realignment that minimizes involvement and bisecting of suitable sagebrush habitat (i.e., maximizes continuity of ridgeline habitat). This alignment should also incorporate considerations for the placement of a gate that will effectively deter vehicular traffic that is not directly associated with well development or maintenance (i.e., including other permitted public land users). It is intended that this gate remain locked at all times (excepting operations that require frequent heavy truck traffic, e.g., drilling, completion, and work-over operations). The applicant will be responsible for installing and maintaining this gate until final abandonment of the road.

11. Any future noxious weed control should be conducted by hand application of herbicides to avoid unnecessary involvement and mortality of sagebrush and forbs while controlling noxious plants.

12. The operator will be required to collect and properly dispose of any solid wastes generated by the Proposed Action.

13. Oil and gas development activities require a stormwater discharge permit from the Colorado Department of Public Health and Environment, Water Quality Control Division, for construction associated with well pads, pipelines, roads and other facilities. As a condition of the permit, a Stormwater Management Plan (SWMP) will be developed showing how Best Management Practices (BMPs) are to be used to control runoff and sediment transport. The applicant is required to have a copy of the SWMP on file with the Meeker Field Office and to implement the BMPs in that plan as on-site conditions warrant. To minimize surface erosion at the well pad, interim reclamation is required as outlined in Mitigation Measure 16.

14. The White River Record of Decision and Approved Resource Management Plan (July, 1997) includes a list of standard Conditions of Approval to be applied to All Surface Disturbing Activities (COAs 1-12) and to Road Construction and Maintenance (COAs 13-62). The applicant is required to be familiar with those standard COAs and to implement them as on-site conditions warrant.

15. Segregation of topsoil material and replacement of topsoil in its respective original position (last out, first in) will assist in the reestablishment of soil health and productivity.

16. All disturbed areas for the pipelines and well pads, with the exception of the access road travel surface area around production facilities, will be reclaimed within the first growing season or prior to the first full growing season following disturbance. Interim reclamation will consist of excess stockpiled soil associated with pad construction being pulled back over the portion of the well pad not being utilized for production facilities and access. Portions of the well pad undergoing interim reclamation will be returned to grade (as close as possible), promptly re-seeded, and biodegradable fabrics will be utilized on slopes exceeding 5% (e.g.,

fill slopes). All available topsoil material will be used on recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation); production facilities will be located in such a way that the surface disturbance available for effective interim reclamation is maximized (e.g., where access road enters the pad), and; all disturbed areas outside the deadman anchors will be recontoured to the extent practicable.

If interim reclamation is not practical (e.g. when drilling operations would require an extended period of time for multiple wells on a single pad), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with the BLM-approved seed mixture below.

17. All reclaimed areas will be reseeded with the following seed mix:

SPECIES	VARIETY (CULTIVAR)	SEEDING RATE
Grasses		
Slender Wheatgrass	San Luis	1.0 lbs
Bluebunch Wheatgrass or Beardless Bluebunch	Goldar or Anatone Whitmar	2.0 lbs
Thickspike Wheatgrass	Critana	1.0 lbs
Indian Ricegrass	Rimrock	2.0 lbs
Western Wheatgrass	Rosana	2.0 lbs
Forbs		
Utah Sweetvetch		1.0 lbs
Scarlet Globemallow		0.5 lbs
Cicer Milkvetch		1.0 lbs
Sainfoin or American Vetch		1.0 lbs
Shrubs		
Antelope Bitterbrush		1.0 lbs
Mountain Mahogany		1.0 lbs
Four-wing Saltbush	Wytana	1.0 lbs
TOTAL		14.5 lbs

**Pure Live Seed per Acre*

Successful revegetation should be achieved within three years. The operator will be required to monitor the project site(s) for a minimum of three years post-construction to detect the presence of noxious/invasive species. Any such species will be eradicated using materials and methods approved in advance by the Authorized Officer.

Final reclamation of roads and well pads following abandonment will be achieved with the native seed mix noted above.

18. Bitterbrush, mahogany, and four-wing saltbush will be included in seed mixtures at all locations except A15 497 to help reduce the loss of foraging habitat for deer and elk.

19. The applicant will place gates on the access roads to well sites D11 497 and E10 497 to reduce disturbance to big game animals in these areas that were not previously roaded.

20. A raptor nest survey is required at well site E10 497 and along its access route prior to construction and drilling, as no survey has been completed to date (N½NE and S½NW section 10, T.4S R.97 W). The area west of well site A23 397 should be resurveyed if construction or drilling occurs during the nesting season (April 15 to August 15) for raptors of concern at this location (NWNW S23, T3S, R97W).

21. Road construction and maintenance standards and procedures will be implemented as described in the APD's 13 Point Surface Use Plan.

22. No blading will occur on the roadway in the pipeline corridor. Road improvements will be limited to placement of additional material/ gravel surfacing on the existing road alignment.

23. Fire avoidance and prevention measures will be implemented as described in the APD's 13 Point Surface Use Plan.

24. The operator has two options for treatment of slash from this project. 1) A hydro-ax or other mulching-type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size. The mulch is evenly scattered across the surface and effectively breaks down the woody fuel thereby eliminating any hazardous fuel load adjacent to the new road and well pad. 2) The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the disturbed area, the material should be evenly scattered, so as to not create jackpots, and the material should not exceed five-tons /acre.

25. All exposed rock outcrops in the project area will be examined by an approved paleontologist with a report detailing the results of the inventory; any mitigation recommendation will be submitted to the BLM prior to the initiation of construction on any of the well pads, compressor site, or road/pipeline right-of-way. A monitor will be present at any time that it becomes necessary to excavate into the underlying bedrock formation in order to bury pipelines, level well pads, or excavate reserve/blooie pits, or to construct any project features.

26. 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.

27. The access road up Scandard Ridge crosses a waterline in the NENW of section 2, T4S, R97W (UTM NAD83 12S, 735716E, 4402080N). Access roads to locations B26 397 and N35 397 also cross a water line between the existing road and the TransColorado pipeline. All crossing points will require padding over the line in sufficient depth to protect the line from crushing or breaking.

28. A pasture fence crosses the existing road between locations D11 497 and N35 397. The fence is located near the section line between section 35, T3S, R97W and section 2, T4S, R97W. The crossing will require a cattleguard constructed to BLM specifications with a wire or metal gate adjacent to it. The cattleguard, gate and fence work will be completed prior to access road and location construction. The adjacent gate could not be placed over the water line that parallels the road on the west side. The effectiveness of the fence will be maintained at all times during construction and operation.

29. All permanent (on-site for six months or longer) structures, facilities, and equipment placed on-site will be low profile and painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

30. Interim reclamation measures described in Mitigation Measure 16 will be implemented to reduce the color contrast.

NAME OF PREPARER: WestWater Engineering

NAME OF ENVIRONMENTAL COORDINATOR: Cynthia P. Holbrook

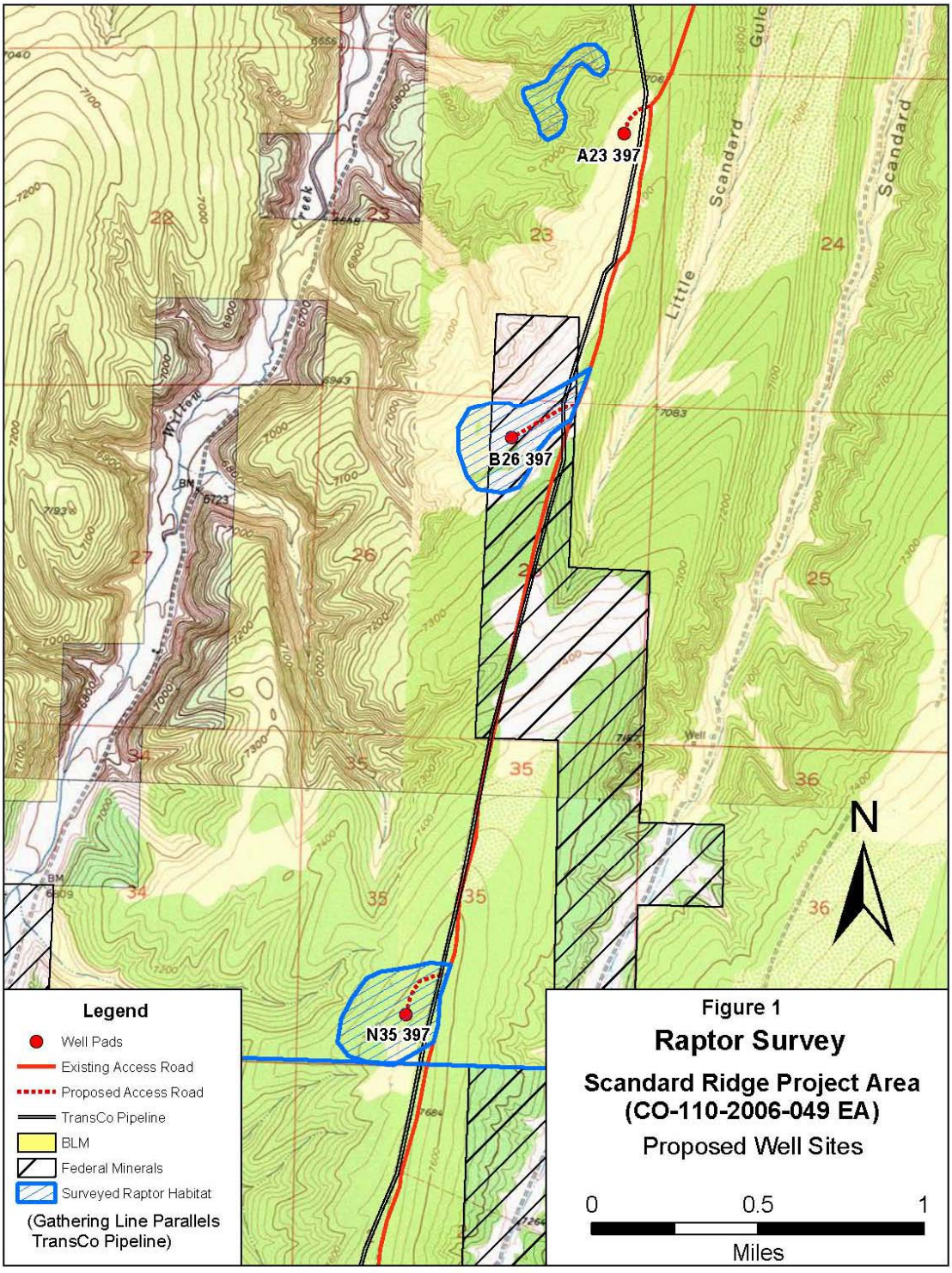
SIGNATURE OF AUTHORIZED OFFICIAL: _____

Field Manager

DATE SIGNED: 3/23/06

ATTACHMENTS: Figure 1- Raptor Survey
Figure 1-Location Map of the Proposed Action
Figure 2-Map of the Scandard Ridge Project Area

CO-110-2006-049-EA 39


A23 397
B26 397
N35 397
Scandard
Little
Scandard
Creek
N
Legend
Well Pads
Existing Access Road
Proposed Access Road
TransCo Pipeline
BLM
Federal Minerals
Surveyed Raptor Habitat
(Gathering Line Parallels TransCo Pipeline)
Figure 1
Raptor Survey
Scandard Ridge Project Area
(CO-110-2006-049 EA)
Proposed Well Sites
0
0.5
1
Miles

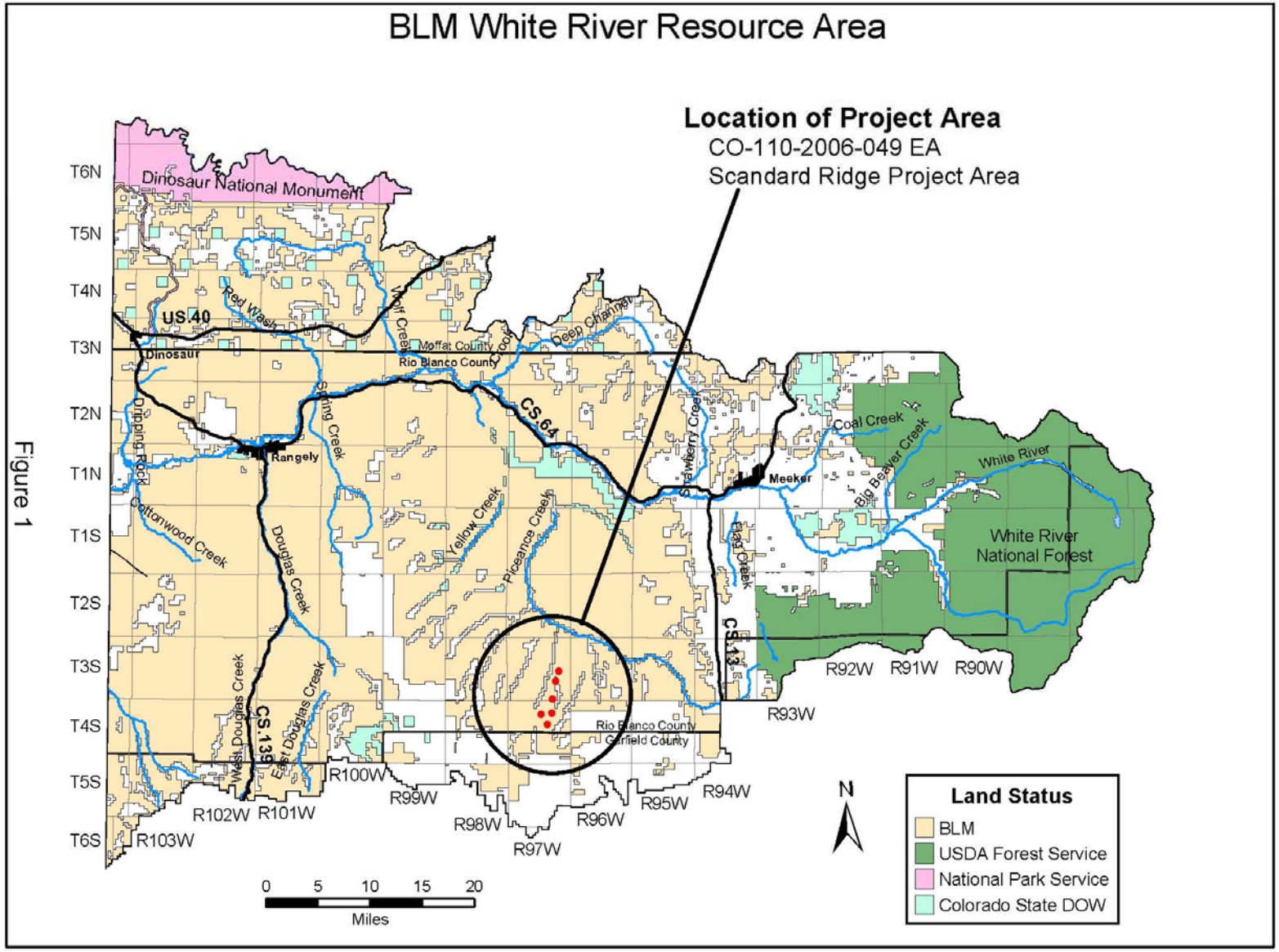

BLM White River Resource Area
Location of Project Area
CO-110-2006-049 EA
Scandard Ridge Project Area
Dinosaur National Monument
US 40
Dinosaur
Rangely
Meeker
Moffat County
Rio Blanco County
Garfield County
White River
National Forest
Red Wash
Wolf Creek
Cooper Creek
Deep Channel
Dripping Rock
Cottonwood Creek
Douglas Creek
West Douglas Creek
East Douglas Creek
Spring Creek
Yellow Creek
Piceance Creek
Shawmerry Creek
Coal Creek
Big Beaver Creek
White River
Flag Creek
CS 64
CS 13
CS 139
T6N
T5N
T4N
T3N
T2N
T1N
T1S
T2S
T3S
T4S
T5S
T6S
R103W
R102W
R101W
R100W
R99W
R98W
R97W
R96W
R95W
R94W
R93W
R92W
R91W
R90W
0 5 10 15 20
Miles
N
Land Status
BLM
USDA Forest Service
National Park Service
Colorado State DOW

Figure 1

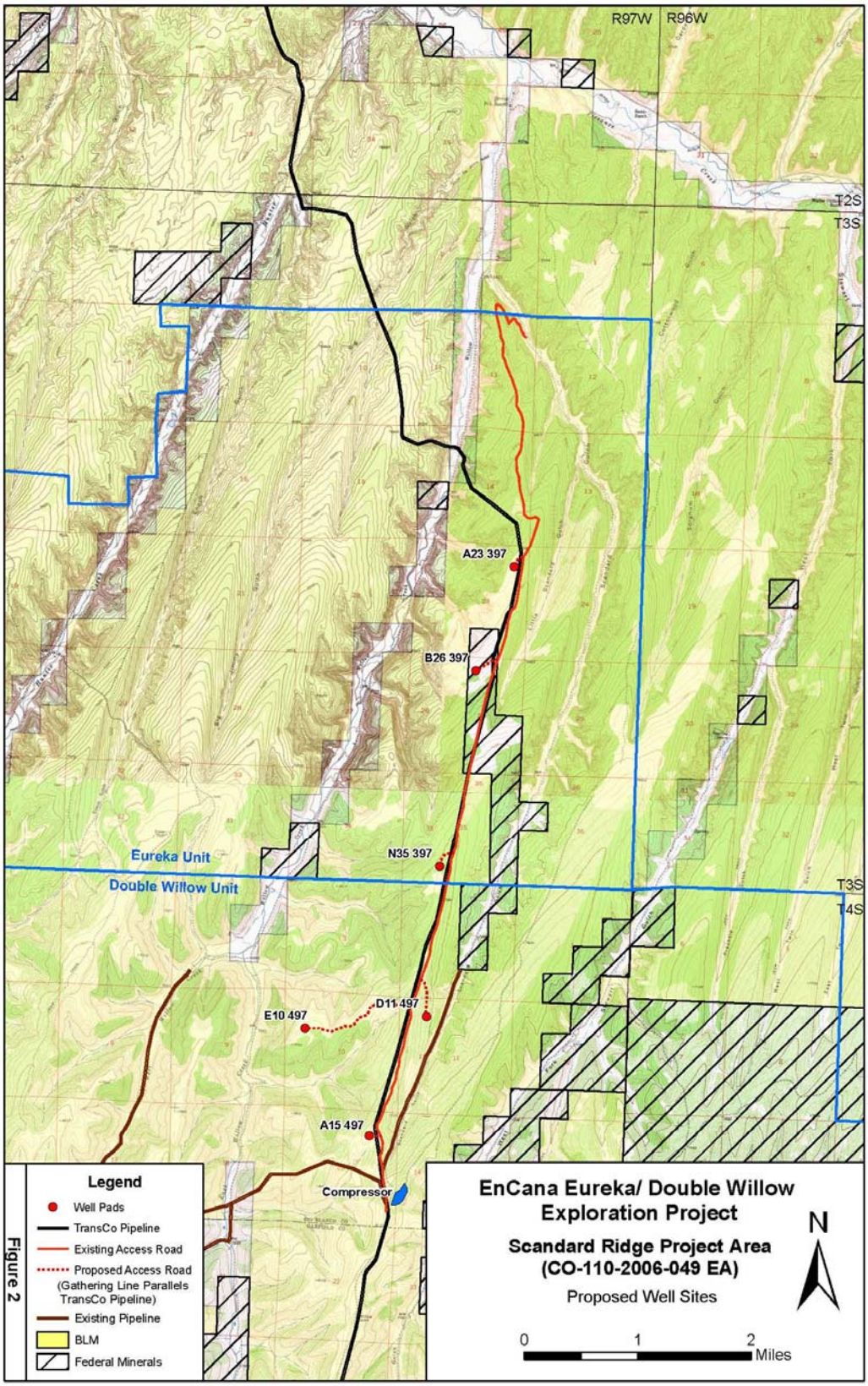

R97W
R96W
T2S
T3S
A23 397
B26 397
N35 397
Eureka Unit
Double Willow Unit
T3S
T4S
E10 497
D11 497
A15 497
Compressor
Legend
Well Pads
TransCo Pipeline
Existing Access Road
Proposed Access Road
(Gathering Line Parallels TransCo Pipeline)
Existing Pipeline
BLM
Federal Minerals
EnCana Eureka/ Double Willow Exploration Project
Scandard Ridge Project Area
(CO-110-2006-049 EA)
Proposed Well Sites
N
0
1
2
Miles

Figure 2