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

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2007-073-EA

CASEFILE/PROJECT NUMBER: COC056909 (7-43)
COC056909 (8-12)
C0127221 (21-22)

PROJECT NAME: Starlight locations 7-43, 8-12, and 21-22

LEGAL DESCRIPTION:

Well	T	R	Sec.	P.M.	Quarter Section	X[a]	Y
7-43	2N	96W	7	6TH P.M.	SW¼SE¼	738133	4448131
8-12	2N	96W	8		NE¼NW¼	739290	4449472
21-22	2N	96W	21		SE¼NW¼	741006	4445838

[a] UTM coordinates were collected during the on-site inspection using the NAD83 datum.

APPLICANT: Starlight Operating Company, Inc.

ISSUES AND CONCERNS: The section of access road south of location 8-12 was analyzed in environmental assessment (EA) CO-110-2006-173-EA (see attached map). Photos for each location are in the well file and at: S:\NEPA\onsite_photos\Brett\Starlight

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Applications have been received by Starlight Operating Company, Inc. to construct **3** well pads and access roads. Information relevant to site characteristics of the proposed project area, and acres disturbed for well pads, access roads, and pipeline ROWs are summarized in Tables 1, 2 and 3.

Table 1. Dominant vegetation, elevation, watershed, date of on-site, watershed, and well and road density for the proposed well locations.

Well Number	Surface Owner	Dominant Vegetation	Elevation (ft)	Well Density (wells/mi^2)	Road Density (wells/mi^2)	Watershed
7-43	BLM	Wyoming big sagebrush and mixed perennial	6,167	1.43	3.07	Oil Well Gulch

Well Number	Surface Owner	Dominant Vegetation	Elevation (ft)	Well Density (wells/mi^2)	Road Density (wells/mi^2)	Watershed
21-22	BLM	grasses	6,033	2.31	3.06	Tschuddi Gulch
8-12		Basin big sagebrush	6,554	<1	2.21	Oil Well Gulch

Proposed Action: The proposed action includes constructing 3 well pads (see Table 2 for pad dimensions and total area disturbed). The applicant would also construct **0.70** miles (**2.54** acres) of new roads to access the proposed well locations, and disturb approximately **1.52** acres for pipeline Right-of-ways (ROWs). Total area disturbed including overburden to construct well pads, access roads, and pipeline ROWs would be approximately **8.98** acres**.**

Table 2. Pad dimensions and acres disturbed for the proposed well pads and access roads.

Well Number	Anticipated Construction Date	Pad Size (ft)	Disturbance[a] (Acres)	New Access (ft)	Disturbance (Acres)
7-43	15 May 2007	250 x 300	1.93	30 x 1,647	1.13
8-12	1 May 2007	250 x 250	1.64	30 x 1,780	1.23
21-22	12 June 2007	200 x 250	1.35	30 x 266	0.18
		Total	**4.92**	**Total**	**2.54**
				Total Disturbed Acres[b]	**7.46**

[a] Estimate includes total acres disturbed for pad surface, overburden, and the production facilities pad.
[b] Estimate includes total acres disturbed for well pads, and access roads.

Table 3. Pipeline dimensions and estimates of acres disturbed for pipeline ROWs.

Well Number	Pipeline ROW Dimensions	Disturbance[a] (Acres)
7-43	15 x 1,539	0.53
8-12	15 x 1,611	0.55
21-22	15 x 1,263	0.44
	Total Disturbed Acres	**1.52**

[a] Estimates include total acres disturbed for the pipeline ROW, and estimates were calculated by subtracting acres disturbed for the access ROW from the total width of the pipeline ROW. Thus, the estimates do not include acres disturbed for the access road and pipeline ROW.

In the event that a discovery is made, the access road will be crowned with a 2% slope to insure drainage. The road borders will be maintained with bar ditches of approximately one-foot depth and surfaced with approximately 6 inches of gravel. Where possible, the gravel surfacing for the road will be put in place after the well has been completed as a producer to allow more natural restoration of the surface in the event of a dry hole.

The proposed production facilities will be submitted via **Sundry Notice** under a separate cover.

Pits which contain oil will be netted.

All water needed for drilling purposes will be obtained from a private source in the town of Meeker, Colorado or from the White River under an existing permit. Water trucks will be used to transport the water using existing access roads to the location.

Drilling fluids, cuttings, and produced water will be contained in the reserve pit. The reserve pit will be fenced on the three non-working sides during drilling and completion phases, and on the fourth side after completion and while the pit is drying. Produced hydrocarbons shall be put into test tanks on location during completion work and removed from location at a later date. Produced water will be put in the reserve pit during completion work per NTL-2B.

If ground frost prevents the segregation and removal of the topsoil material from the less desirable subsoil material, cross ripping to the depth of the topsoil material may be necessary. The reserve pit will be oriented to prevent collection of surface runoff. After the drilling rig is removed, the operator will construct a trench on the uphill side of the reserve pit to divert surface drainage around it, if needed.

All rehabilitation work, including seeding, will be completed by the fall of 2007. The BLM will not release the operators bond until the area has been successfully reclaimed to the standard of the surface owner or Surface Management Agency. The area of the reserve pit and that portion of the drill pad not needed for production operations will be re-contoured to blend as nearly as possible with the surrounding, natural topography. The reclaimed area and the remaining stockpiled topsoil will be re-seeded in late fall, prior to the ground freezing, with the seed mixture prescribed by the surface owner or the BLM.

"Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3162.3-2.

No Action Alternative: Under the no action alternative, the application would be denied and the well pads and access roads would not be constructed.

NEED FOR THE ACTION: To respond to request by applicant to exercise lease rights and develop potential hydrocarbon reserves.

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

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

Date Approved: July 1, 1997

Decision Number/Page: Pages 2-5 thru 2-6

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

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

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

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The entire White River Resource area has been classified as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed action is not located within a thirty mile radius of any special designation air sheds or non-attainment areas. The air quality criteria pollutant likely to be most affected by the proposed actions is the level of inhalable particulate matter, specifically particles ten microns or less in diameter (PM_{10}) associated with fugitive dust. In addition, slight increases in the following criteria pollutants: carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, and sulfur dioxide may also occur during construction due to the combustion of fossil fuels associated with construction and drilling operations. Also, non-criteria pollutants such as visibility, nitric oxide, air toxics (e.g. benzene) and total suspended particulates (TSP) may also experience slight short term increases as a result of the proposed actions (no national ambient air quality standards have been set for non-criteria pollutants). Unfortunately, no monitoring data is available for the survey area. However, it is apparent that current air quality near the proposed location is good because only one location on the western slope (Grand Junction, CO) is monitoring for criteria pollutants other than $PM_{10.}$ Furthermore, 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 near 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 $\mu g/m^3$ (CDPHE-APCD, 2005).

Environmental Consequences of the Proposed Action: Impacts detrimental to air quality resulting from the proposed actions can be expected as carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, particulate matter, and sulfur dioxide levels are elevated within the airshed. Construction equipment producing elemental and organic carbon via fuel combustion combined with surface disturbing activities that leave soils exposed to eolian processes will both increase production of particulate matter (PM_{10}) during construction. Elemental and organic carbon existing in the air as PM_{10} can reduce visibility and increase the potential of respiratory health problems to exposed parties. However, following initial construction, suggested

mitigation, and successful interim reclamation, criteria pollutant levels should return to near pre-construction levels.

Environmental Consequences of the No Action Alternative: None

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

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

CULTURAL RESOURCES

Affected Environment: Proposed 7-43 well pad, access road and well tie pipeline: The proposed well pad, access route and well tie pipeline route have been inventoried at the Class III (100% pedestrian) level (Conner and Davenport 2006) with one prehistoric site located just outside the ten acre inventory boundary within 308 meters of the proposed well pad center stake.

Proposed 8-12 well pad, access road and well tie pipeline: The proposed well pad location, access route and well tie pipeline route have been inventoried at the Class III (100% pedestrian) level (Conner and Davenport 2006) with no resources identified in the new construction zones. There are currently no known sites within 308 meters of the well center stake.

Proposed 21-22 well pad, access road and well tie pipeline: The proposed well pad location, access route and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Brogan and Donovan 2002) with no new cultural resources identified in the inventoried area. However, there could be unrecorded resources within 308 meters of the well center stake.

Environmental Consequences of the Proposed Action: Proposed 7-43 well, access and well tie pipeline: The proposed well pad location will no directly impact site 5RB 5199 however the potential exists for impacts to the site from increased human presence in the area and the potential for unauthorized collections. Previously unrecorded sites within 308 meters of the well

center stake could also be adversely impacted due to increased access and increased human activity in the area.

Proposed 8-12 well pad, access road and well tie pipeline: The proposed well pad and access road will not impact any known cultural resources however, previously unrecorded sites within 308 meters of the project area could be impacted by increased access in the area that could lead to increased unauthorized collection of cultural materials.

Proposed 21-22 well pad, access route and well tie pipeline: The proposed well pad and access road will not impact any known cultural resources however, previously unrecorded sites within 308 meters of the project area could be impacted by increased access in the area that could lead to increased unauthorized collection of cultural materials

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

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

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

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

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

3. For 7-43 well, access and well tie pipeline: All personnel must remain on the construction site/well pad location at all times during construction, maintenance and operation of the proposed well. Starlight and its assigns will be held responsible for maintaining site security for the life of the well.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Cheatgrass *(Bromus tectorum)* is an undesirable, invasive, non-native, annual grass present in the areas of the proposed action. It is highly adapted to invade disturbed sites. Spotted knapweed, houndstongue, Canada thistle and Musk thistle are also present on disturbed soils in association with oil and gas pads and pipelines in the general area of the proposal. Drought conditions have prevailed in this area for the past several years, minimizing successful re-establishment of desired plant species at other projects in this area. Undesirable and invasive annual plant species (e.g. cheatgrass) have become well established to dominant in portions of previously disturbed areas. These species provide little resource value and hinder efforts to meet Public Land Health Standards.

Environmental Consequences of the Proposed Action: Activities and disturbances associated with the proposed 3 well pads and roads will likely result in further establishment of undesirable, invasive, non-native species. This is directly related to soil disturbing activities and associated elimination of native plant communities, as well as noxious and invasive weed seeds being transported by equipment. Invasive species such as cheat grass compete with desirable vegetation.

Weedy species found in the area are effectively controlled by establishment of seeded desirable species in disturbed areas. The proposed seed mixes **(Native Seed Mix #1, 2, 5)** from the White River ROD/RMP are recommended because those plant species are best adapted to these sites and offer the best opportunity to establish vegetation cover that mimics these native rangelands. Limiting factors for successful reclamation of the site include drought, excessive grazing use, and cheatgrass presence on the adjacent rangelands.

Prompt reclamation and re-vegetation including successful establishment of seeded species will help prevent cheatgrass from establishing on the 7.46 acres of disturbance associated with the pads, production facilities, and access roads. If other noxious weeds invade any of the disturbed areas associated with the proposed action, prompt control will be necessary to help prevent spread into the adjacent plant communities. Future disturbance associated with pipelines will be required to meet the same conditions.

Environmental Consequences of the No Action Alternative: None

Mitigation: The applicant shall monitor all disturbed and reclaimed areas through final abandonment for the presence of invasive, non-native, and/or noxious plant species resulting from the proposed action. The applicant will be responsible for control of cheatgrass and other invasive weeds if they increase in density as a result of this proposed action. The applicant will be responsible for eradication of noxious weeds (including but not limited to: Canada, bull, musk, and plumeless thistle; Russian spotted, diffuse, or squarrose knapweed; houndstongue; leafy spurge; hoary cress; halogeton; and black henbane) that occur as a result of the proposed action.

Upon detection of noxious, non-native, and/or invasive plant species, the applicant will control their presence or eliminate the infestation (as specified above) before seed production using materials and methods as outlined in the White River ROD/RMP and/or authorized in advance by the White River Field Office Manager. Application of herbicides must be under field supervision of an EPA certified pesticide applicator. Herbicides must be registered by the EPA and application proposals must be approved by the BLM.

Any straw or other mulch materials used for this proposal must be certified free of noxious weeds. Certificates will be provided to the responsible NRS.

MIGRATORY BIRDS

Affected Environment: The Migratory Bird Treaty Act (MBTA) prohibits disturbance or destruction to an active nest, nesting birds, or their eggs or young. This applies to all birds (including raptors), except non-native species including house sparrow, European starling, rock dove, and upland game birds.

Executive Order (EO) 13186 sets forth the responsibilities of federal agencies to implement further the provisions of the MBTA by integrating bird conservation principles and practices into agency activities and by ensuring that federal actions evaluate the effects of actions and agency plans on migratory birds.

U.S. Fish and Wildlife Service (USFWS) compiled a list of Birds of Conservation Concern (BCC) to identify migratory and non-migratory bird species (not including those already designated as federally threatened or endangered) that without conservation actions may become candidates for listing under the Endangered Species Act (ESA) (USFWS 2002). Additionally, Partners in Flight (PIF) North American Landbird Conservation Plan (Rich et al. 2004) addresses bird species not protected by other existing conservation programs.

Regarding locations 7-43, 8-12, and 21-22, a variety of migratory bird species fulfill nesting functions in the project area's predominantly and Wyoming big sagebrush shrublands and associated Pinyon-juniper woodlands from late May through early August. For a detailed description of location elevation and dominant vegetation, see Table. 1. Species associated with these woodland communities are typical and widely represented in the WRFO Resource Area and throughout the region. Those bird populations identified by the Rocky Mountain Bird Observatory Partners in Flight program as having higher conservation interest include Brewer's sparrow (which occur in sagebrush-dominated areas), and gray flycatcher, pinyon jay, juniper titmouse, black-throated gray warbler, and violet-green swallow, which occur in pinion-juniper dominated woodlands. The species identified are well distributed at appropriate densities in the White River Resource Area's extensive woodland and shrubland habitats.

Environmental Consequences of the Proposed Action: It is anticipated that construction-related activities would start as early as 1 May 2007, with drilling and completion operations extending into June. Given the anticipated time and duration of construction activities submitted by the Operator, heavy equipment use and high levels of activity associated with site

construction would occur during the migratory bird nesting season, though impacts to local and regional bird populations as a result of direct and indirect effects to breeding behavior, distribution and abundance are unknown. Furthermore, long-term, large-scale cumulative impacts to breeding populations of migratory birds within the WRFO Resource Area as a result of increased oil and gas activity is unknown. However, because of the relative small size of the individual surface disturbance actions, and the small spatial extent of nesting habitat that will be impacted directly as a result of the proposed action, short-term impacts will most likely not influence the distribution and abundance of local and regional migratory bird populations.

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. It has been brought to the White River Field Office's attention that migratory waterfowl have contacted oil-based drilling fluids stored in reserve pits during or after completion operations and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and directed at preventing bird contact with produced water and drilling and completion fluids that may pose a risk (i.e., acute or chronic toxicity, compromised insulation) to these species.

Environmental Consequences of the No Action Alternative: There would be no affect on migratory birds or their habitats under the no action alternative.

Mitigation: The Operator will be responsible for implementing mitigation measures that minimize bird injuries or mortality as a result of contact with produced water in the reserve pit. The most effective measure currently being used includes the use of netting to cover the pit. The use of plastic balls that float on the surface and reduce the area that might be perceived by waterfowl as a place to rest and/or forage has also been used in certain circumstances, with limited results. The use of plastic flagging has proven to be ineffective at deterring use by migratory waterfowl for foraging, resting or as a source of free water, and is strongly discouraged. The Operator will notify WRFO Natural Resource Specialist, Brett Smithers via Email (brett_smithers@blm.gov) or by phone ([970] 878-3818) of the method that will be used to prevent impacts to birds two weeks prior to the date when **completion activities** are expected to begin. The BLM-approved method will be applied within **24 hours** after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

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

Affected Environment: There are not any endangered or threatened species that are known to inhabit or derive important use, from the proposed project areas for locations 7-43, 8-12, and 21-22.

Environmental Consequences of the Proposed Action: The proposed action would have no conceivable influence on special status animals or associated habitat.

Environmental Consequences of the No Action Alternative: The no action alternative would have no conceivable influence on special status animals or associated habitat.

Mitigation: None

Finding on the Public Land Health Standard for Threatened & Endangered species: The proposed action would not have any influence on populations or habitat associated with special status species.

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

Affected Environment: There are no endangered or threatened species of plants that are known to inhabit or derive important use from the proposed project areas.

Environmental Consequences of the Proposed Action: The proposed action would have no conceivable influence on special status plants or associated habitat.

Environmental Consequences of the No Action Alternative: The no action alternative would have no conceivable influence on special status plants or associated habitat.

Mitigation: None

Finding on the Public Land Health Standard for Threatened & Endangered species: The proposed action would have no influence on populations or habitat associated with special status species.

WASTES, HAZARDOUS OR SOLID

Affected Environment: Fuels, oils, and lubricants will be used during the project, and solid waste (human waste, garbage, etc.) will be generated during activities. 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 will be properly disposed of. Accidental spills or leaks associated with equipment failures, refueling or maintenance of equipment, and storage of fuel, oil, or other fluids could cause soil, surface water and/or groundwater contamination. With implementation of the mitigation measures described below, impacts would be low and temporary.

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

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

The holder(s) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

The holder shall submit documentation of its Spill Prevention Containment and Countermeasure (SPCC) plan, *if applicable*; to the authorized officer prior to scheduled start up.

If during any phase of the construction, operation, or termination of the pipeline or related facilities any oil or other pollutant should be discharged from the pipeline system, or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of holder to control, cleanup, or dispose of such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting from, the authorized officer may take such measures as he deems necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the authorized officer shall not relieve the holder of any liability or responsibility.

A release of any chemical, oil, petroleum product, produced water, or sewage, etc, (regardless of quantity) must be reported to the Bureau of Land Management – WRFO Hazardous Materials Coordinator, at (970) 878-3800. The Colorado Department of Public Health and Environment (CDPHE) should be notified, if applicable, through the 24-hour spill reporting line at 1 (877) 518-5608.

If the operator encounters any waste dump sites, on or adjacent to the project area, they must be reported to the BLM.

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

Affected Environment: The proposed action is located in the Crooked Wash fifth level watershed. The proposed well pad location, pipelines, and access road are all situated in stream segment 9a of the White River Basin. 6th and 7th level watersheds directly impacted by the proposed actions are Wray Gulch, Tschuddi Gulch, Blacks Gulch, and Oil Well Gulch. Wray Gulch and Oil Well Gulch are both ephemeral tributaries to the White River. Tschuddi Gulch is an ephemeral tributary to Blacks Gulch which is an ephemeral tributary to the White River. The White River is a tributary to the Green River (in Utah) which is a tributary to the Colorado River.

The "Status of Water Quality in Colorado –2006" (CDPHE 2006b) and Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a) were reviewed for information relating to drainages within the project area. Stream segment 9a of the White River Basin is defined as all tributaries to the White River, including all wetlands, from the confluence of the North and South Forks to a point immediately above the confluence with Piceance Creek, which are not within the boundary of national forest lands, except for the specific listings in segments 9b and 10b. The State has classified stream segment 9a of the White River Basin as "Use Protected" and further designated as beneficial for the following uses: Cold Aquatic Life 2, Recreation 2, water supply, and Agriculture. The antidegredation review requirements in the Antidegredation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. For this reach, minimum standards for four parameters have been listed. These parameters are: dissolved oxygen = 6.0 milligrams per liter (mg/l), pH = 6.5 - 9.0, and Fecal Coliform = 2,000/100 milliliters (ml) and 630/100 ml E. coli. Numeric standards for inorganic compounds and metals can be found within Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a).

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

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

Table 1:

Summary of Hydrogeologic Units						
Hydrogeologic Unit	**Stratigraphic Unit**	**Physical Description**	**Thickness**	**Hydraulic Conductivity**	**Yield**	**TDS**
			(ft)	**(ft/day)**	**(gpm)**	**mg/L**
Upper Piceance Basin aquifer	Uinta Formation	sandstone, fractured siltstone, fractured marlstone	0 – 1,400	<0.2 to >1.6	1- 900	500-1,000
Mahogany confining unit	Green River Formation	dolomitic marlstone and shale	500-1,800	<0.01	<25	NL
Lower Piceance Basin aquifer	Green River Formation	shale, fine-grained sandstone, fractured marlstone	0 – 1,870	<0.1 to >1.2	1-1,000	1,000-10,000
Basal confining unit	Green River Formation, Wasatch Formation	claystone, siltstone, clay rich oil shale, marlstone, channel sandstone	0-6,800	<0.01	<10-100	NL
Fort Union aquifer	Fort Union Formation	Coarse-grained sandstone	Very thin	NL	NL	NL
Mesaverde aquifer	Mesaverde Group	sandstone interbedded shale and coal	Averages 3,000	0.0001-1.0	NL	NL
Mancos confining unit	Mancos Shale	mostly shale but Frontier Sandstone may be local aquifer	>7,000	NL	NL	NL
Abbreviations: ft = feet, approx = approximate, avg = average, gpm = gallons per minute, mg = milligrams, L = liters, and NL = not listed.						

Table information from Topper et al. (2003).

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

Environmental Consequences of the Proposed Action: Surface Water: Clearing, grading, and soil stockpiling activities may temporarily alter overland flow and natural groundwater recharge patterns. Near-surface soil compaction caused by construction equipment and vehicles could reduce the soil's ability to absorb water and could increase surface runoff, sedimentation and salt loading to surface waters in of the Colorado River System. The magnitude and duration of potential impacts to surface runoff and groundwater recharge would depend on soil depth, soil type, vegetation type and density, slope, aspect, erosive force of rainfall or surface runoff, and duration and extent of construction activities. Impacts would likely be greatest immediately following completion of construction activities and would likely decrease thereafter due to reclamation procedures.

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

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

Environmental Consequences of the No Action Alternative: Potential adverse environmental impacts resulting from energy development at the proposed location would not occur.

Mitigation: All surface disturbing activities on BLM administered lands will strictly adhere to "Gold Book" (fourth edition) surface operating standards for oil and gas exploration and development (copies of the "Gold Book" can be obtained at the WRFO). Corrugated metal pipes (CMPs) and drainage dips shall be located in such a manner as to avoid discharge onto unstable terrain such as headwalls or slumps. CMPs are not recommended on roads that have gradients less than 10 percent. Based on the nature of the affected soils, drain dips will be utilized in place of CMPs in these locations. The use of drain dips on road gradients greater than 10 percent should be avoided. Energy dissipaters such as large gravels/small cobbles will be used at culvert and drainage dip inlets/outlets to minimize additional erosion. To mitigate water being channelized down the roadway, all activity will stop when soils or road surfaces become saturated to a depth of three inches. Mud blading will be prohibited in attempts to reduce further soil displacement (unless otherwise approved by the BLM).

The proposed access road to location 8-12 exhibits sever soil erosion due to head cut development. This erosional feature must be repaired to "Gold Book" standards prior to equipment mobilization.

The operator will consult with the State of Colorado Water Quality Control Division (contact Matt Czahor at: 303-692-3575 or matthew.czahor@state.co.us) regarding Stormwater Discharge

Permits prior to commencing construction activities. All construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required prior to the start of construction to indicate that appropriate permits have been obtained. XTO has filed a General Permit Application with the Colorado Department of Public Health and Environment (CDPHE) to permit stormwater discharges associated with construction of well pads, access roads, pipelines, storage areas and related disturbances. This permit was approved, assigned certification number COR-038830, and is on file at the BLM-WRFO. The stormwater management plan (SWMP) contains an appendix for each site, one acre or more, where surface disturbance is required that will outline additional site specific mitigation measures aimed at minimizing the impacts of stormwater runoff. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be faxed (970-878-3805), or mailed to Nate Dieterich at the White River Field Office.

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

- Debris and waste materials other than de minimus amounts, including, but not limited to, concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe and cable, as well as equipment associated with the drilling, re-entry or completion operations shall be removed.
- Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.
- Stockpiled topsoil will be seeded with a BLM approved seed mixture. Topsoil stockpiles that will potentially remain in place for extended periods of time (e.g. multi-well locations) will be covered with biodegradable fabrics such as (but not limited to) jute netting or Curlex and seeded with the appropriated seed mixture.
- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
- Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces affected by pipeline/road construction, drilling or subsequent operations, except areas reasonably needed for production operations. Areas on *well pads* not needed for production operations shall be partially reshaped as early and as nearly as practicable to near pre-construction contours. Pipelines will be recontoured to pre-construction contours as soon as construction activities cease.
- The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in recontouring/partial-reshaping efforts.
- Recontoured/partially-reshaped areas will be seeded with a BLM approved seed mixture, and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics

(such as but not limited to Jute blankets, Curlex…) to provide additional protection to topsoil, retain soil moisture, and help promote desired vegetative growth.

- Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured/partially-reshaped areas to act as flow deflectors and sediment traps. Available woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
- The operator will be responsible for excluding livestock grazing from all reclaimed portions of *well pads*. To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced wooden corners or net wire fence brought to the ground surface built to BLM specifications will be constructed around all reclaimed portions of the well pad including cut and fill slopes immediately after interim reclamation is concluded (within 2 weeks) unless otherwise instructed by the BLM. A BLM specified cattleguard will be placed at the time of fence construction where the well access road bisects the fenceline that surrounds the well pad's disturbance imprint. Once reclaimed plant species are fully established on disturbed sites as determined by the BLM (e.g. Desired Plant Community (DPC), Public Land Health Standards), the fence and cattle guard will be completely removed by the applicant after a minimum of two growing seasons. This will allow for reclaimed plant species to establish without grazing pressure from livestock.
- The operator will be responsible for achieving a reclamation success rate for interim reclamation and final abandonment of sufficient vegetative ground cover from reclaimed plant species within three growing seasons after the application of seed. Additional reclamation efforts will be undertaken at the operators expense if: after the first growing season there is no positive indicators of successful establishment of seeded species (e.g. germination); after the second year seeded species are not yet established (e.g. producing seed); and after the third growing season seeded vegetative communities lack persistence (e.g. reproductively capable of enduring drought conditions and sustaining the seeded community). Following the third growing season, ground cover of reclaimed seed species shall be at a Desired Plant Community (DPC) in relation to the seed mix as deemed appropriate by the BLM. Reclamation achievement will be evaluated using the Public Land Health Standards that include indicators of rangeland health. Rehabilitation efforts must be repeated if it is concluded that the success rate is below an acceptable level as determined by the BLM.
- A Reclamation Status Report will be submitted to the WRFO biannually for all actions that require disturbance of surface soils on BLM-administered lands as a result of the proposed action. Actions may include, but are not limited to, well pad and road construction, construction of ancillary facilities, or power line and pipeline construction. The Reclamation Status Report will be submitted by **15 April** and **15 August** of each calendar year, and will include the well number, legal description, project description (e.g., well pad or pipeline), reclamation status (e.g., interim or final), whether the well pad or pipeline has been re-vegetated and/or re-contoured, date seeded, photos of the reclaimed site, estimate of acres seeded and seeding method (e.g., disk-plowed, drilled, or both). Internal and external review of this report and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report. The Reclamation Status Report

will be submitted electronically via email as a Microsoft Excel table to Natural Resource Specialist, Brett Smithers (brett_smithers@blm.gov).

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

Finding on the Public Land Health Standard for water quality: Stream segment 9a of the White River Basin currently meets water quality standards set by the state. Many of the upper tributaries which are ephemeral and flow in direct response to storm events do not meet the standards during periods of flow. Following suggested mitigation measures, water quality in the affected stream segment should be unaffected by the proposed action and continue to meet standards.

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

Affected Environment: The area adjacent to the proposed project area does not support riparian or wetland communities. Furthermore, riparian or wetland communities will not be directly involved or potentially affected by the proposed action.

Environmental Consequences of the Proposed Action: The proposed action would have no conceivable influence on riparian or wetland communities.

Environmental Consequences of the No Action Alternative: The no-action alternative would not have any conceivable influence on riparian or wetland communities.

Mitigation: None

Finding on the Public Land Health Standard for riparian systems: This project would have no conceivable potential for influencing riparian attributes addressed in the Standards.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No ACEC's, flood plains, prime and unique farmlands, Wilderness, or Wild and Scenic Rivers exist within the area affected by the proposed action. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

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

SOILS (includes a finding on Standard 1)

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

Table 2:

Soil Number	Soil Name	Slope (%)	Affected Acres w/in 30 m	Ecological site	Salinity	RunOff	Erosion Potential	Bedrock
10	Blazon, moist-Rentsac Complex	6-65%	0.93	Pinyon-Juniper woodland	2-4	Rapid	Moderate to very high	10-20
41	Havre loam	0-4%	11.74	Foothill Swale	<4	Medium	Slight	>60
74	Rentsac-Moyerson-Rock Outcrop complex	5-65%	1.67	PJ Woodlands/Clayey Slopes	<2	Medium	Moderate to very high	10-20
89	Tisworth fine sandy loam	0-5%	4.42	Alkaline Slopes	>4	Rapid	Moderate	>60
104	Yamac Loam	2-15%	10.69	Rolling Loam	<2	Medium	Slight to moderate	>60

10-Blazon, moist-Rentsac complex, 8 to 65 percent slopes. This map unit is on foothills and ridges. Areas are irregular in shape and are 100 to 2,500 acres in size. The native vegetation is mainly pinyon and juniper trees with an understory of brush and grasses. Elevation is 5,700 to 6,900 feet. The average annual precipitation is 15 to 17 inches, the average annual air temperature is 42 to 44 degrees F, and the average frost-free period is 80 to 105 days. This unit is 50 percent Blazon channery loam and 35 percent Rentsac channery loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used. Included in this unit are small areas of Havre and Jerry loams, Thornburgh channery loam, Moyerson stony clay loam, and Patent and Rhone loams. Also included are small areas of Rock outcrop and soils that are similar to the Blazon and Rentsac soils but are moderately deep. Included areas make up about 15 percent of the total acreage. The Blazon soil is shallow and well drained. It formed in residuum derived dominantly from shale. Typically, the upper part of the surface layer is brown channery loam about 4 inches thick. The lower part is brown channery clay loam about 7 inches thick. The underlying material is light yellowish brown shaly clay loam about 5 inches thick. Soft shale is at a depth of 16 inches. Depth to soft shale ranges from 10 to 20 inches. Permeability of the Blazon soil is moderately slow. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate to very high. The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone. Typically, the surface layer is grayish brown

channery loam about 5 inches thick. The next layer is brown very channery loam about 4 inches thick. The underlying material is very pale brown extremely flaggy loam about 7 inches thick. Hard sandstone is a depth of 16 inches. Depth to sandstone ranges from 10 to 20 inches. Permeability of the Rentsac soil is moderately rapid. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate to very high.

41-Havre loam, 0 to 4 percent slopes. This deep, well drained soil is on flood plains and low stream terraces. It formed in calcareous alluvium. Areas are long and narrow and are 40 to 400 acres. The native vegetation is mainly low shrubs and grasses. Elevation is 5,800 to 7,200 feet. The average annual precipitation is 14 to 17 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is light brownish gray loam 21 inches thick. The upper 19 inches of the underlying material is stratified, light gray loam and silty clay loam, and the lower part to a depth of 60 inches or more is stratified loam and sandy loam. In some areas the surface layer is clay loam of fine sandy loam. Included in this unit are small areas of Barcus channery loamy sand, Glendive fine sandy loam, Hagga loam, and Tisworth fine sandy loam. The Barcus soil is on the edge of steeper areas of outwash, and the Hagga soil is in swales. Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another. Permeability of the Havre soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight. Small areas of this soil are subject to brief periods of flash flooding late in the spring and in summer This map unit is in capability subclasses IIIe, irrigated, and IIIc, nonirrigated. It is in Foothill Swale range site.

74-Rentsac-Moyerson-Rock outcrop complex, 5 to 65 percent slopes. This map unit is on foothills and ridges. Areas are irregular in shape and are 160 to 5,000 acres in size. The native vegetation is mainly pinyon and juniper trees with an understory of shrubs and grasses. Elevation is 5,800 to 7,200 feet. The average annual precipitation is 13 to 16 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 75 to 105 days. This unit is 40 percent Rentsac channery loam that has slopes of 5 to 50 percent, 25 percent Moyerson stony clay loam that has slopes of 15 to 65 percent, and 20 percent Rock outcrop that has slopes of 5 to 65 percent. The Moyerson soil is mainly in the lower lying areas of the unit. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used. Included in this unit are small areas of Blazon channery clay loam, Bulkley channery silty clay loam, Dollard silty clay loam, Redcreek sandy loam, and Yamac loam. Also included are small areas of soils that are similar to the Rentsac and Moyerson soils but are moderately deep to sandstone or shale. Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another.

The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone. Typically, the surface layer is grayish brown channery loam about 5 inches thick. The next layer is brown very channery loam about 4 inches thick. The underlying material is very pale brown extremely flaggy loam 7 inches thick. Sandstone is at a depth of 16 inches. Depth to sandstone ranges from 10 to 20 inches. In some areas the surface layer is quite variable in texture. Permeability of the Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water

erosion is moderate to very high. The Moyerson soil is shallow and well drained. It formed in residuum derived dominantly from shale. Typically, the surface layer is light gray stony clay loam about 2 inches thick. The next layer is gray clay loam about 8 inches thick. The underlying material is gray clay 7 inches thick. Shale is at a depth of 17 inches. Depth to shale ranges from 10 to 20 inches. In some areas the surface layer is silty clay loam, silty clay, light clay, or bouldery clay loam. Permeability of the Moyerson soil is slow. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is very high.

89-Tisworth fine sandy loam, 0 to 5 percent slopes. This deep, well drained soil is on valley floors and broad fans. It formed in alluvium derived dominantly from sedimentary rock with a high content of gypsum and alkaline salt. Areas are elongated and are 30 to 300 acres. The native vegetation is mainly salt-tolerant shrubs and grasses. Elevation is 5,800 to 7,000 feet. The average annual precipitation is 13 to 15 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is pale brown fine sandy loam 4 inches thick. The subsoil is light yellowish brown clay loam 7 inches thick. The upper 9 inches of the underlying material is very pale brown fine sandy loam that has fine crystals and seams of gypsum and calcium carbonate, and the lower part to a depth of 60 inches or more is very pale brown fine sandy loam. In some areas the surface layer is loam or clay loam. Included in this unit are small areas of Absher and Havre loams, Kobar silty clay loam, Moyerson clay loam, and Patent and Trembles loams. Also included are small areas of soils that are similar to this Tisworth soil but are severely gullied and soils that have slightly steeper slopes. Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another. Permeability of this Tisworth soil is slow. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is moderate. This unit is used for livestock grazing, irrigated hay and pasture, and wildlife habitat.

104-Yamac loam, 2 to 15 percent slopes. This deep, well drained soil is on rolling uplands, terraces, and fans. It formed in eolian and alluvial material. Areas are elongated and are 20 to 500 acres. The native vegetation is mainly low shrubs and grasses. Elevation is 5,800 to 7,100 feet. The average annual precipitation is 13 to 16 inches, the average annual air temperature is 40 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is brown loam 4 inches thick. The upper 8 inches of the subsoil is brown loam, and the lower 10 inches is highly calcareous loam. The upper 26 inches of the substratum is very pale brown loam, and the lower part to a depth of 60 inches or more is pale brown loam. Included in this unit are small areas of Forelle loam, Piceance fine sandy loam, Redcreek sandy loam, and Rentsac channery loam. Also included are small areas of strongly alkaline slick spots that are less than 50 feet in diameter and small areas of soils that are subject to gullying. Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another. Permeability of this Yamac soil is moderate. Available water capacity is moderate to high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight to moderate.

Environmental Consequences of the Proposed Action: Access road and well pad construction would remove surface cover and disturb soils, thus potentially increasing soil

erosion and reducing soil health and productivity. Mitigation proposed below as well as the vegetation section would help to minimize these impacts and restore soil.

Environmental Consequences of the No Action Alternative: None

Mitigation: To mitigate potential for soil erosion, all disturbed surfaces should be promptly revegetated with the appropriate seed mixture as outlined in the vegetation section of this document.

Finding on the Public Land Health Standard for upland soils: Predominance of cheat grass, halogeton, and other non desirable plant species combined with existing oil and gas developments (roads, well pads, pipe lines, power lines …) have reduced infiltration and permeability rates resulting in increased rates of soil erosion. As a result, these locations do not meet standards for upland soils. With suggested mitigation as outlined in the water quality section of this document, soil health near the proposed actions can move towards achieving land health standards.

VEGETATION (includes a finding on Standard 3)

Affected Environment: Proposed site 7-43 is located in the interface of a Wyoming big sagebrush (*Artemisia tridentata* ssp*. wyomingensis*) park and Pinyon Juniper clayey slope site. The proposed access road to this site will go primarily through Glendive fine sandy loam soils (foothill swale ecological site) and the proposed pad is in Rentsac-Moyerson-Rock Outcrop complex soil type on slopes of 5-10%. The understory of these sites is dominated by a sparse herbaceous component of western wheatgrass (*Agropyron smithii*), Sandberg bluegrass (*Poa secunda*), and June grass (*Koeleria cristata*) (see table below). Location 8-12 is in a narrow valley bottom dominated by basin sage brush *(Artemisia tridentate sp tridentata)* with the proposed pad located approximately 75 feet from the drainage. Soils here are primarily a Havre loam of 0-4% slope foothill swale ecological site. The understory of this site is dominated by western wheatgrass, Sandberg bluegrass (*Poa secunda*), and June grass. Site 21-22 occurs on an alkaline slope ecological site of Tisworth fine sandy loam soils with 0-5% slopes. This site is also dominated by a Wyoming big sagebrush community. The understory here is predominantly western wheatgrass, Sandberg bluegrass and June grass.

Ecological Site / Woodland Type	**Plant Community Appearance**	**Predominant Plant Species in the Plant Community**
Alkaline Slopes	Sagebrush / Grass Shrubland	Wyoming big sagebrush, winterfat, low rabbitbrush, wheat grasses, Indian rice grass, squirreltail
Foothill Swale	Grass / Open Shrub Shrubland	Basin wildrye, western wheatgrass, slender wheatgrass, streambank wheatgrass, Indian rice grass, Nevada bluegrass, basin big sagebrush, fourwing saltbush, rubber rabbitbrush
Rolling Loam	Sagebrush / Grass Shrubland	Wyoming big sagebrush, winterfat, low rabbitbrush, horsebrush, bitterbrush, western wheat grass, Indian rice grass, squirreltail, June grass, Nevada and Sandberg bluegrass

Drought conditions have been prevalent in this area for several years which has hampered successful re-vegetation of other projects in this area. Undesirable non-native invasive annual plant species such as cheatgrass have become dominant in portions of previously disturbed areas nearby. These species provide little resource value and hamper efforts to meet Public Land Health Standards. Cheatgrass is present in the area of all three sites listed in the proposed action. With adequate moisture levels and appropriate rehabilitation techniques sites 7-43 and 8-12 should favor successful rehabilitation following disturbance. Site 21-22 will likely require more intensive reclamation efforts that may need to be repeated until desirable plant species establish adequately.

Environmental Consequences of the Proposed Action: The proposed action would disturb mid seral class shrub and grass communities for a total of 7.46 acres, all of which are on public land. After construction, successful interim reclamation of all areas not necessary for access and production facilities will reduce the total amount of disturbance. The un-reclaimed areas of the well pads and access roads would be considered a long-term vegetative loss. Without successful reclamation including adequate establishment of seeded species there is potential for an increase in undesirable plant species (i.e. cheatgrass, annual mustards) that readily invade disturbed sites.

Generally through the first two growing seasons after reclamation has occurred seeded plant species are becoming established and developing adequate root systems. During this timeframe the plants are especially vulnerable to grazing pressure. Because they are succulent and readily available they tend to be sought out by livestock and wildlife as preferred forage. This situation of heavy livestock/wildlife grazing use on newly reclaimed areas reduces the ability of seeded plants to establish. The area surrounding the proposed well sites has already sustained considerable impacts from oil and gas activities including a network of access roads, well pads, and pipeline corridors. This has resulted in fragmentation and reduced productivity of ecological sites. The proposal would result in an additional 7.46 acres of disturbed plant communities.

Environmental Consequences of the No Action Alternative: None

Mitigation: Successful interim reclamation shall include the re-vegetation (adequate establishment of seeded plant species as determined by the BLM) of all disturbed areas not needed for site access or production including, shoulders of access roads, cut and fill slopes, and topsoil stockpiles, immediately after completion of drilling.

On proposed site **7-43** and the access road re-vegetation will be accomplished using Native Seed Mix #2 from the White River Resource Area Resource Management Plan (RMP), Appendix B Table B-2, page B-21 (see table below).

Native Seed Mix #	Species (Variety)	Lbs. PLS per Acre
2	Western wheatgrass (Rosanna)	2
	Indian ricegrass (Nezpar)	2
	Bluebunch wheatgrass (Whitmar)	2
	Thickspike wheatgrass (Critana)	1
	Green needlegrass (Lodorm)	1

Native Seed Mix #	Species (Variety)	Lbs. PLS per Acre
2	Globemallow	0.5

On proposed site **8-12** re-vegetation will be accomplished using Native Seed Mix 5 from the White River Resource Area Resource Management Plan (RMP), Appendix B Table B-2, page B-22 (see table below).

Native Seed Mix #	Species (Variety)	Lbs. PLS per Acre
5	Basin Wildrye (Magnar)	2
	Western wheatgrass (Rosanna, Arriba)	3
	Bluebunch wheatgrass (Secar)	1
	Thickspike wheatgrass (Critana)	2
	Fourwing saltbush (Wytana)	1

On proposed site **21-22** (Alkaline Slopes) re-vegetation will be accomplished using Native Seed Mix #1 from the White River Resource Area Resource Management Plan (RMP), Appendix B Table B-2, page B-21 (see table below).

Native Seed Mix #	Species (Variety)	Lbs. PLS per Acre
1	Western wheatgrass (Rosanna)	3
	Streambank wheatgrass (Sodar)	2
	Thickspike wheatgrass (Critana)	2
	Fourwing saltbush (Wytana, Rincon)	2

Seeding rates in the White River ROD/RMP are shown as pounds of Pure Live Seed (PLS) per acre and apply to drill seeding. When drill seeding is not feasible (e.g. steep slopes, etc.), then broadcast seed using double the seeding rate followed by harrowing to ensure seed coverage. Applied seed must be certified and free of noxious weeds. Once the proposed wells are abandoned, the applicant shall re-contour all disturbances (i.e., cut and fill slopes, well pads, roadways, etc.) to the natural contour interval of the site prior to disturbance. Final reclamation includes successful re-vegetation of the site with plants from the seed mixes specified above. Re-vegetation efforts must be continued until desired plant species are well established on each site.

Topsoil shall be stockpiled separately from the spoil piles during construction of the pad. This separated topsoil shall be spread evenly, recreating the top soil horizon upon interim reclamation and final rehabilitation. Re-use of the topsoil will aid in the establishment of seeded species.

The applicant shall be required to achieve a reclamation success rate of sufficient vegetative ground cover from reclaimed plant species within three growing seasons after the application of seed. The ground cover of reclaimed seed species shall be comparable to that of the nearby undisturbed plant communities that are at a Potential Natural Community (PNC) state in relation to the seed mix as deemed appropriate by the BLM. Rehabilitation efforts must be repeated until it is concluded that the success rate is at an acceptable level as determined by the BLM.

Re-vegetation of disturbed areas will be severely hampered if livestock are allowed to graze the seeded areas in the first two growing seasons after reclamation. To facilitate successful re-vegetation each site will be fenced to exclude livestock from the reclaimed area of all well pad locations (including cut and fill slopes) to provide a livestock (cattle) tight barrier within two weeks after interim reclamation is completed. Fencing will consist of braced corners with a 4 strand barbwire fence or a net wire fence brought to the ground's surface. BLM specified cattleguards will be installed at the same time as fence construction where the well access road bisects the fenceline surrounding the well pad's disturbance imprint. Once reclaimed plant species are fully established on disturbed sites as determined by the BLM (see paragraph above), the fences and cattleguards will be completely removed by the applicant. This will allow reclaimed plant species to become well established without grazing pressure from livestock.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial)*:* The proposed action would disturb areas of Foothills Swale, Clayey Slopes and Alkaline Slope ecological sites further fragmenting these landscapes. Mid seral ecological sites at the proposed action area currently have acceptable plant communities and are meeting standards for public land health.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: The proposed locations are separated from warm-water aquatic communities supported by the lower White River by approximately 8 miles of ephemeral channel.

Environmental Consequences of the Proposed Action: Separated by approximately 8 miles of ephemeral channel, there is no reasonable likelihood that aquatic habitats associated with downstream perennial systems would be influenced by proposed well and road construction.

Environmental Consequences of the No Action Alternative: There would be no immediate action authorized that would have potential to affect wetland or riparian communities.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): Because there are no aquatic habitats or animals potentially influenced by the proposed or no-action alternatives, a land health standard finding is not applicable. The proposed and no action alternatives would have no measurable influence on aquatic habitats associated with downstream systems.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The proposed locations for 7-43, 8-12 and 21-22 are situated in areas dominated by mixed Wyoming big sagebrush and shadscale-saltbush parks, associated with stunted, open-canopied pinyon-juniper woodlands.

None of the proposed locations include suitable nesting habitat for raptors. As such, raptor surveys were not required for locations 7-43, 8-12 and 21-22.

The proposed location for the well pads and access roads include deer critical winter range. These ranges sustain big game use from November through early May.

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

Environmental Consequences of the Proposed Action: Surface disturbances associated with the proposed action would result in the direct loss of mule deer critical winter habitat. In addition, human activity associated with drilling activities and increased traffic could result in increased mortality from vehicle collisions and temporarily displace elk and mule deer into areas of decreased disturbance. Both species commonly avoid areas of human activity and would potentially disperse up to 300 feet from all activity areas (Hollowed, E., personal communication, May 2004). Current road densities are high (**2.21** to **3.07** miles of road per square mile) in the project area and currently exceed road density objectives established in the White River ROD/RMP (i.e., road densities of **3** miles/square mile on big game ranges, White River ROD/RMP, page 2-29).

Because of potential cumulative local and regional impacts to big game dispersal and seasonal movement patterns as a result of increased oil and gas activity in areas identified as critical big game habitat, as directed by the White River ROD/RMP (1997) the stipulation developed specifically for big game critical habitat will apply. As such, no development activity is allowed from December 1 through April 30 for location 7-43, 8-12 and 21-22. Development is allowed from May 1 through November 30.

Environmental Consequences of the No Action Alternative: No immediate action would be authorized that would involve the adverse modification of terrestrial wildlife habitats.

Mitigation: Because of potential cumulative local and regional impacts to big game dispersal and seasonal movement patterns as a result of increased oil and gas activity in areas identified as critical big game habitat, as directed by the WRFO RMP (1997) the stipulation developed specifically for big game critical winter habitat will apply. As such, no development activity is allowed from **December 1** through **April 30** for locations **7-43, 8-12** and **21-22.** Development is allowed from May 1 through November 30. This stipulation applies to all surface disturbing activities.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): The project area presently meets the public land health standards for terrestrial animal communities. As conditioned, the proposed action would have

negligible long term influence on the utility or function of big game, raptor, or non-game habitats surrounding the proposed location for the well pad and access road. In an overall context, lands affected by the no-action or proposed action would continue to meet the land health standard for terrestrial animals.

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

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

ACCESS AND TRANSPORTATION

Affected Environment: The proposed action occurs within an area designated as Open Seasonally. The area is closed to off road cross-county travel from October 1 through April 30 of each year. The access follows Rio Blanco County Roads 142 and 143 and several unnamed unnumbered BLM routes through public lands onto private property in Oil Well Gulch. Traffic along these roads is heaviest during the fall hunting seasons but is also used for accessing existing, producing wells.

Environmental Consequences of the Proposed Action: Approximately 1500 feet of new road construction and 1800 feet of upgrading will take place on BLM surface lands. It is likely with the continued increase in traffic of all types to service and construct these wells that road surface damage may occur as a result if road maintenance activities are not commensurate with the levels of road usage. An increase in route proliferation is also likely due to the increase in new roads being developed. No new access will be created.

Environmental Consequences of the No Action Alternative: None

Mitigation: All roads shall be constructed and maintained by permittee per "Gold Book" standards.

GEOLOGY AND MINERALS

Affected Environment: The three proposed well pads are located in Sections 7, 8, and 21, T2N-R96W, on Leases COC-056909, COC-056909, and C-0127221, respectively. The pads are topographically situated along the south flank of Colorow Mountain in the northern part of the White River drainage system. Both the proposed Starlight Federal #7-43 and #8-12 well pads are located near tributaries of Oil Well Gulch. The Proposed Starlight Federal #21-22 well pad is positioned in the bottom of the Tschuddi Gulch drainage system. None of the three pads is in close proximity (i.e. with a mile or less) to natural springs in the area.

Geologically, the proposed pads are situated in the northeastern part of the Piceance Basin and on the eastern flank of the White River Dome Field. Gas is primarily produced from coals and discontinuous sandstones of the Williams Fork and Cameo Formations of the Mesaverde Group at subsurface depths between about 5,000 and 8,500 feet. The surface geologic formation within the area of the three proposed sites is the Wasatch Formation, consisting predominantly of claystone, shale and sandstone of Eocene age (Tweto, 1979). Significant subsurface mineral resources that probably underlie the Wasatch Formation in the immediate vicinity include coal, oil, and gas. According to the RMP, the Leases COC-056909 and C-0127221 are within an area currently open to oil and gas mineral extraction activity only. Lastly, the proposed surface operations will not impact any sensitive or fragile soil areas.

Environmental Consequences of the Proposed Action: Drilling and completion of these wells may adversely affect fresh water aquifers in the area if unforeseen loss of circulation or cementing problems occur, particularly in the surface portion of the borehole. In the absence of such problems, the approved cementing and completion procedure of the proposed wells is designed to isolate hydrocarbon-bearing formations and prevent the migration of fluids between formations. Production of the wells drilled from the three proposed sites will deplete the hydrocarbon resources of the targeted formations in this area. The proposed activity will have no negative impacts on the development of subsurface coal resources in the area because the majority of these deposits occur at vertical depths greater than 5,000 feet and conventional recovery of coal reserves at such depths is not considered economically feasible.

Environmental Consequences of the No Action Alternative: Hydrocarbon resources would not be produced and royalty revenues would not be generated at this time.

Mitigation: In order to protect fresh water aquifers in the area, only environmentally friendly mud systems and contingency mud additives may be used in drilling future wells from the three proposed well pad locations.

PALEONTOLOGY

Affected Environment: Proposed 7-43 well pad, access route and well tie pipeline: The proposed well location, access route and well tie pipeline are in an area generally mapped as the Wasatch Formation (Tweto 1979) which the WRFO, BLM has classified as a Condition I Formation. Condition I formations are known to produce scientifically important fossil resources.

Proposed 8-12 well location, access route and well tie pipeline: The proposed well location, access route and well tie pipeline are in an area generally mapped as the Wasatch Formation (Tweto 1979) which the WRFO, BLM has classified as a Condition I Formation. Condition I formations are known to produce scientifically important fossil resources.

Proposed 21-22 well location, access route and well tie pipeline: The proposed well location, access route and well tie pipeline are in an area generally mapped as the Wasatch Formation (Tweto 1979) which the WRFO, BLM has classified as a Condition I Formation. Condition I formations are known to produce scientifically important fossil resources.

Environmental Consequences of the Proposed Action: Proposed 7-43 well pad, access route and well tie pipeline: If it should become necessary to excavate into the underlying rock formation to construct the access route, level the well pad, excavate the reserve/blooie pit or bury the well tie pipeline there is a high potential for impact scientifically important fossil resources.

Proposed 8-12 well pad, access route and well tie pipeline: If it should become necessary to excavate into the underlying rock formation to construct the access route, level the well pad, excavate the reserve/blooie pit or bury the well tie pipeline there is a high potential for impact scientifically important fossil resources.

Proposed 21-22 well pad, access route and well tie pipeline: If it should become necessary to excavate into the underlying rock formation to construct the access route, level the well pad, excavate the reserve/blooie pit or bury the well tie pipeline there is a high potential for impact scientifically important fossil resources.

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

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

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

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator

will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Any time it becomes necessary to excavate into the underlying rock formation to construct the access, level the well pad, excavate the reserve/blooie pit or bury the well tie pipeline a paleontological monitor shall be present during all such excavations.

RANGELAND MANAGEMENT

Affected Environment: The proposed action is located in the Blacks Gulch allotment (06612), which is authorized for cattle use by Sam and Virginia Love. Grazing use by **510** cows can be authorized from April 16 through December 30 in the allotment. Typical cattle use in the vicinity of the proposal is mid April to mid July.

Soils in the project area are principally a Yamac Loam, 2-15% Slopes (Rolling Loam ecological site). This soil type provides a productive forage capacity of rangelands that are utilized by cattle to meet nutrient requirements.

Drought conditions have prevailed in this area for the past several years, minimizing successful reclamation with and re-establishment of desired plant species at other projects in this area. Undesirable and invasive annual plant species (e.g. cheatgrass and halogeton) have become well established to dominant in portions of previously disturbed areas. These species provide little resource value and hinder efforts to meet Public Land Health Standards.

There are two small reservoirs located down gradient within approximately 75 and 200 yards of well pad 8-12 and 7-43 respectively which could potentially fill with sediment as a result of the proposed action.

Environmental Consequences of the Proposed Action: The individual proposed action would have minimal impacts on the authorized grazing use because the amount of new surface disturbance (7.5 acres) is nominal in regard to the overall scale of the allotment (29,639 acres).

The 7.5 acres of disturbance associated with the proposed well pads (6.2 acres) and access roads (1.3 acres) is considered long term. The total acres disturbed would decrease somewhat with successful interim reclamation of the parts of the well pads outside of the operational area, and berms on the roadsides.

Long-term forage losses associated with the individual proposed action are estimated at 1 active Animal Unit Month (AUM) due to a reduction of forage availability. An AUM is the amount of forage necessary for the sustenance of 1 cow and her calf for a period of 1 month. This part of the Blacks Gulch allotment has previously been subjected to considerable impacts from oil and gas activities, which have resulted in a reduction of and fragmentation of available rangelands and a net loss of forage for grazing use. Cumulative impacts from past, present, and future oil and gas development will likely have long-term effects on rangeland carrying capacity

potentially affecting the AUMs authorized on this grazing permit. These effects would be determined during the grazing permit renewal process, which includes an evaluation of forage capacity available for livestock. It is foreseeable that the grazing permit holder could lose a portion of permitted active AUMs due to a loss of forage production and fragmentation of the rangelands associated with oil and gas development.

If the proposed action is authorized during the permitted grazing period, it would likely have some impact on cattle are grazing. This is in part due to increased activity associated with drilling and associated activities and a decrease in rangelands available for grazing. BLM livestock grazing permittees have experienced injury to and losses of livestock due to heavy truck travel and inadequate fencing of disposal pits on pads. Another impact to livestock grazing may include modification in livestock distribution related to increased equipment and vehicle activity.

Environmental Consequences of the No Action Alternative: None

Mitigation: Any livestock control facilities and/or rangeland improvements impacted during this operation will be replaced or repaired to at least their condition prior to these activities. Cattleguards associated with access roads need to be maintained (i.e. kept cleaned of sediment to a depth that maintains their function). Structural integrity of fences and cattleguards affected by proposed activities must be maintained at all times.

All reserve pits must be fenced with woven wire or 4-strand barbwire with reinforced corners strung to the ground surface to prevent livestock from entering the pits. On-site silt retention methods needs to be designed and implemented for all roads and well pads to minimize silt loads into the watersheds of nearby stock ponds.

REALTY AUTHORIZATIONS

Affected Environment: The proposed pipelines and access roads are all contained entirely within the Ant Hill; therefore, no rights-of-way will be required.

RECREATION

Affected Environment: The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The project area has been delineated a Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM). SPM physical and social recreation setting is typically characterized by a natural appearing environment with few administrative controls, low interaction between users but evidence of other users may be present. SPM recreation experience is characterized by

a high probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

Environmental Consequences of the Proposed Action: The public will lose approximately 8 acres of dispersed recreation potential while wells are in operation. The public will most likely not recreate in the vicinity of these facilities and will be dispersed elsewhere. If action coincides with hunting seasons (September through November) it will most likely disrupt the experience sought by those recreationists.

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

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

Mitigation: None.

VISUAL RESOURCES

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

Environmental Consequences of the Proposed Action: The proposed actions for all three well pads would not be visible from State Highway 64, which would be the route traveled by a casual observer. Persons traveling along the existing dirt roads in the area that might be able to view the proposed actions would more than likely be energy related personnel, hunters during big game seasons, and ranchers that are permitted to graze livestock on BLM lands. By painting all above ground facilities Juniper Green to mimic and blend with the surrounding vegetation types, the level of change to the characteristic landscape would be less than moderate, and the objectives of the VRM III classification would be retained.

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

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

CUMULATIVE IMPACTS SUMMARY: This action is consistent with the scope of impacts addressed in the White River ROD/RMP. The cumulative impacts of oil and gas activities are

addressed in the White River ROD/RMP for each resource value that would be affected by the proposed action.

REFERENCES CITED:

Brogan, John and Kerry Donovan
2002 Tom Brown Inc, Ant Hill Unit #21-22 Well Pad, Access and Tie-in, Class III Cultural Resource Inventory, Rio Blanco County, Colorado. Metcalf Archaeological Consultants, Inc., Eagle, Colorado.

Conner, Carl E. and Barbara J. Davenport
2006 Class III Cultural Resource Inventory Report for Five Proposed White River Dome Well Locations: (Fed #7-43, Fed. #8-12, Fed. #17-21, Fed. #17-42, and Fed. #18-23) in Rio Blanco County, Colorado, For Starlight Corporation. Grand River Institute, Grand Junction, Colorado.

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

PERSONS / AGENCIES CONSULTED: None

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Thomas Johnson	Hydrologist	Air Quality, Water Quality, Surface and Ground Hydrology and Water Rights, Soils
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern, Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources, Paleontological Resources
Mary Taylor	Rangeland Management Specialist	Invasive, Non-Native Species, Vegetation , Rangeland Management
Brett Smithers	Wildlife Biologist	Migratory Birds, Threatened, Endangered and Sensitive Animal Species, Wildlife, Wildlife Terrestrial and Aquatic, Wetlands and Riparian Zones
Thomas Johnson	Hydrologist	Wastes, Hazardous or Solid
Chris Ham	Outdoor Recreation Planner	Wilderness, Access and Transportation, Recreation,
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Pamela Leschak	Geologist	Geology and Minerals
Penny Brown	Realty Specialist	Realty Authorizations
Keith Whitaker	Natural Resource Specialist	Visual Resources
Melissa Kindall	Rangeland Technician	Wild Horse

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

CO-110-2007-073-EA

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

DECISION/RATIONALE: It is my decision to approve the proposed action with the mitigation measures listed below.

MITIGATION MEASURES:

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

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

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever

recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

3. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

4. For 7-43 well, access and well tie pipeline: All personnel must remain on the construction site/well pad location at all times during construction, maintenance and operation of the proposed well. Starlight and its assigns will be held responsible for maintaining site security for the life of the well.

5. The applicant shall monitor all disturbed and reclaimed areas through final abandonment for the presence of invasive, non-native, and/or noxious plant species resulting from the proposed action. The applicant will be responsible for control of cheatgrass and other invasive weeds if they increase in density as a result of this proposed action. The applicant will be responsible for eradication of noxious weeds (including but not limited to: Canada, bull, musk, and plumeless thistle; Russian spotted, diffuse, or squarrose knapweed; houndstongue; leafy spurge; hoary cress; halogeton; and black henbane) that occur as a result of the proposed action.

6. A **Reclamation Status Report** will be submitted to the WRFO biannually for all actions that require disturbance of surface soils on BLM-administered lands as a result of the proposed action. Actions may include, but are not limited to, well pad and road construction, construction of ancillary facilities, or power line and pipeline construction. The Reclamation Status Report will be submitted by **15 April** and **15 August** of each calendar year, and will include the well number, legal description, project description (e.g., well pad or pipeline), reclamation status (e.g., interim or final), whether the well pad or pipeline has been re-vegetated and/or re-contoured, date seeded, photos of the reclaimed site, estimate of acres seeded and seeding method (e.g., disk-plowed, drilled, or both). Internal and external review of this report and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report. The Reclamation Status Report will be submitted electronically via email as a Microsoft Excel table to Natural Resource Specialist, Brett Smithers (brett_smithers@blm.gov).

7. Upon detection of noxious, non-native, and/or invasive plant species, the applicant will control their presence or eliminate the infestation (as specified above) before seed production using materials and methods as outlined in the RMP and/or authorized in advance by the White River Field Office Manager. Application of herbicides must be under field supervision of an EPA certified pesticide applicator. Herbicides must be registered by the EPA and application proposals must be approved by the BLM.

8. Any straw or other mulch materials used for this proposal must be certified free of noxious weeds. Certificates will be provided to the responsible NRS.

9. The Operator will be responsible for implementing mitigation measures that minimize bird injuries or mortality as a result of contact with produced water in the reserve pit. The most effective measure currently being used includes the use of netting to cover the pit. The use of plastic balls that float on the surface and reduce the area that might be perceived by waterfowl as a place to rest and/or forage has also been used in certain circumstances, with limited results. The use of plastic flagging has proven to be ineffective at deterring use by migratory waterfowl for foraging, resting or as a source of free water, and is strongly discouraged. The Operator will notify WRFO Natural Resource Specialist, Brett Smithers via Email (brett_smithers@blm.gov) or by phone ([970] 878-3818) of the method that will be used to prevent impacts to birds two weeks prior to the date when **completion activities** are expected to begin. The BLM-approved method will be applied within **24 hours** after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

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

11. The holder(s) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

12. The holder shall submit documentation of its Spill Prevention Containment and Countermeasure (SPCC) plan, *if applicable*, to the authorized officer prior to scheduled start up.

13. If during any phase of the construction, operation, or termination of the pipeline or related facilities any oil or other pollutant should be discharged from the pipeline system, or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of holder to control, cleanup, or dispose of such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting from, the authorized officer may take such measures as he deems necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife

habitats, at the full expense of the holder. Such action by the authorized officer shall not relieve the holder of any liability or responsibility.

14. A release of any chemical, oil, petroleum product, produced water, or sewage, etc, (regardless of quantity) must be reported to the Bureau of Land Management – WRFO Hazardous Materials Coordinator, at (970) 878-3800. The Colorado Department of Public Health and Environment (CDPHE) should be notified, if applicable, through the 24-hour spill reporting line at 1 (877) 518-5608.

15. If the operator encounters any waste dump sites, on or adjacent to the project area, they must be reported to the BLM.

16. All surface disturbing activities on BLM administered lands will strictly adhere to "Gold Book" (fourth edition) surface operating standards for oil and gas exploration and development (copies of the "Gold Book" can be obtained at the WRFO). Corrugated metal pipes (CMPs) and drainage dips shall be located in such a manner as to avoid discharge onto unstable terrain such as headwalls or slumps. CMPs are not recommended on roads that have gradients less than 10 percent. Based on the nature of the affected soils, drain dips will be utilized in place of CMPs in these locations. The use of drain dips on road gradients greater than 10 percent should be avoided. Energy dissipaters such as large gravels/small cobbles will be used at culvert and drainage dip inlets/outlets to minimize additional erosion. To mitigate water being channelized down the roadway, all activity will stop when soils or road surfaces become saturated to a depth of three inches. Mud blading will be prohibited in attempts to reduce further soil displacement (unless otherwise approved by the BLM).

17. The proposed access road to location 8-12 exhibits sever soil erosion due to head cut development. This erosional feature must be repaired to "Gold Book" standards prior to equipment mobilization.

18. The operator will consult with the State of Colorado Water Quality Control Division (contact Matt Czahor at: 303-692-3575 or matthew.czahor@state.co.us) regarding Stormwater Discharge Permits prior to commencing construction activities. All construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required prior to the start of construction to indicate that appropriate permits have been obtained. XTO has filed a General Permit Application with the Colorado Department of Public Health and Environment (CDPHE) to permit stormwater discharges associated with construction of well pads, access roads, pipelines, storage areas and related disturbances. This permit was approved, assigned certification number COR-038830, and is on file at the BLM-WRFO. The stormwater management plan (SWMP) contains an appendix for each site, one acre or more, where surface disturbance is required that will outline additional site specific mitigation measures aimed at minimizing the impacts of stormwater runoff. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be faxed (970-878-3805), or mailed to Nate Dieterich at the White River Field Office.

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

- Debris and waste materials other than de minimus amounts, including, but not limited to, concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe and cable, as well as equipment associated with the drilling, re-entry or completion operations shall be removed.
- Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.
- Stockpiled topsoil will be seeded with a BLM approved seed mixture. Topsoil stockpiles that will potentially remain in place for extended periods of time (e.g. multi-well locations) will be covered with biodegradable fabrics such as (but not limited to) jute netting or Curlex and seeded with the appropriated seed mixture.
- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
- Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces affected by pipeline/road construction, drilling or subsequent operations, except areas reasonably needed for production operations. Areas on *well pads* not needed for production operations shall be partially reshaped as early and as nearly as practicable to near pre-construction contours. Pipelines will be recontoured to pre-construction contours as soon as construction activities cease.
- The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in recontouring/partial-reshaping efforts.
- Recontoured/partially-reshaped areas will be seeded with a BLM approved seed mixture, and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex…) to provide additional protection to topsoil, retain soil moisture, and help promote desired vegetative growth.
- Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured/partially-reshaped areas to act as flow deflectors and sediment traps. Available woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
- The operator will be responsible for excluding livestock grazing from all reclaimed portions of *well pads*. To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced wooden corners or net wire fence brought to the ground surface built to BLM specifications will be constructed around all reclaimed portions of the well pad including cut and fill slopes immediately after interim reclamation is concluded (within 2 weeks) unless otherwise instructed by the BLM. A BLM specified cattleguard will be placed at the time of fence construction where the well access road bisects the fenceline that surrounds the well

pad's disturbance imprint. Once reclaimed plant species are fully established on disturbed sites as determined by the BLM (e.g. Desired Plant Community (DPC), Public Land Health Standards), the fence and cattle guard will be completely removed by the applicant after a minimum of two growing seasons. This will allow for reclaimed plant species to establish without grazing pressure from livestock.

- The operator will be responsible for achieving a reclamation success rate for interim reclamation and final abandonment of sufficient vegetative ground cover from reclaimed plant species within three growing seasons after the application of seed. Additional reclamation efforts will be undertaken at the operators expense if: after the first growing season there is no positive indicators of successful establishment of seeded species (e.g. germination); after the second year seeded species are not yet established (e.g. producing seed); and after the third growing season seeded vegetative communities lack persistence (e.g. reproductively capable of enduring drought conditions and sustaining the seeded community). Following the third growing season, ground cover of reclaimed seed species shall be at a Desired Plant Community (DPC) in relation to the seed mix as deemed appropriate by the BLM. Reclamation achievement will be evaluated using the Public Land Health Standards that include indicators of rangeland health. Rehabilitation efforts must be repeated if it is concluded that the success rate is below an acceptable level as determined by the BLM.

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

21. Successful interim reclamation shall include the re-vegetation (adequate establishment of seeded plant species as determined by the BLM) of all disturbed areas not needed for site access or production including, shoulders of access roads, cut and fill slopes, and topsoil stockpiles, immediately after completion of drilling.

22. On proposed site **7-43** and the access road re-vegetation will be accomplished using Native Seed Mix #2 from the White River Resource Area Resource Management Plan (RMP), Appendix B Table B-2, page B-21 (see table below).

Native Seed Mix #	Species (Variety)	Lbs. PLS per Acre
2	Western wheatgrass (Rosanna)	2
	Indian ricegrass (Nezpar)	2
	Bluebunch wheatgrass (Whitmar)	2
	Thickspike wheatgrass (Critana)	1
	Green needlegrass (Lodorm)	1
	Globemallow	0.5

On proposed site **8-12** re-vegetation will be accomplished using Native Seed Mix 5 from the White River Resource Area Resource Management Plan (RMP), Appendix B Table B-2, page B-22 (see table below).

Native Seed Mix #	Species (Variety)	Lbs. PLS per Acre
5	Basin Wildrye (Magnar)	2
	Western wheatgrass (Rosanna, Arriba)	3
	Bluebunch wheatgrass (Secar)	1
	Thickspike wheatgrass (Critana)	2
	Fourwing saltbush (Wytana)	1

On proposed site **21-22** (Alkaline Slopes) re-vegetation will be accomplished using Native Seed Mix #1 from the White River Resource Area Resource Management Plan (RMP), Appendix B Table B-2, page B-21 (see table below).

Native Seed Mix #	Species (Variety)	Lbs. PLS per Acre
1	Western wheatgrass (Rosanna)	3
	Streambank wheatgrass (Sodar)	2
	Thickspike wheatgrass (Critana)	2
	Fourwing saltbush (Wytana, Rincon)	2

23. Seeding rates in the RMP are shown as pounds of Pure Live Seed (PLS) per acre and apply to drill seeding. When drill seeding is not feasible (e.g. steep slopes, etc.), then broadcast seed using double the seeding rate followed by harrowing to ensure seed coverage. Applied seed must be certified and free of noxious weeds. Once the proposed wells are abandoned, the applicant shall re-contour all disturbances (i.e., cut and fill slopes, well pads, roadways, etc.) to the natural contour interval of the site prior to disturbance. Final reclamation includes successful re-vegetation of the site with plants from the seed mixes specified above. Re-vegetation efforts must be continued until desired plant species are well established on each site.

24. Topsoil shall be stockpiled separately from the spoil piles during construction of the pad. This separated topsoil shall be spread evenly, recreating the top soil horizon upon interim reclamation and final rehabilitation. Re-use of the topsoil will aid in the establishment of seeded species.

25. The applicant shall be required to achieve a reclamation success rate of sufficient vegetative ground cover from reclaimed plant species within three growing seasons after the application of seed. The ground cover of reclaimed seed species shall be comparable to that of the nearby undisturbed plant communities that are at a Potential Natural Community (PNC) state in relation to the seed mix as deemed appropriate by the BLM. Rehabilitation efforts must be repeated until it is concluded that the success rate is at an acceptable level as determined by the BLM.

26. Re-vegetation of disturbed areas will be severely hampered if livestock are allowed to graze the seeded areas in the first two growing seasons after reclamation. To facilitate successful re-vegetation each site will be fenced to exclude livestock from the reclaimed area of all well pad locations (including cut and fill slopes) to provide a livestock (cattle) tight barrier within two weeks after interim reclamation is completed. Fencing will consist of braced corners with a 4

strand barbwire fence or a net wire fence brought to the ground's surface. BLM specified cattleguards will be installed at the same time as fence construction where the well access road bisects the fenceline surrounding the well pad's disturbance imprint. Once reclaimed plant species are fully established on disturbed sites as determined by the BLM (see paragraph above), the fences and cattleguards will be completely removed by the applicant. This will allow reclaimed plant species to become well established without grazing pressure from livestock.

27. Because of potential cumulative local and regional impacts to big game dispersal and seasonal movement patterns as a result of increased oil and gas activity in areas identified as critical big game habitat, as directed by the White River ROD/RMP (1997) the stipulation developed specifically for big game critical winter habitat will apply. As such, no development activity is allowed from **December 1** through **April 30** for locations **7-43, 8-12** and **21-22.** Development is allowed from May 1 through November 30. This stipulation applies to all surface disturbing activities.

28. All roads shall be constructed and maintained by the Operator per "Gold Book" standards.

29. In order to protect fresh water aquifers in the area, only environmentally friendly mud systems and contingency mud additives may be used in drilling future wells from the three proposed well pad locations.

30. 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.

31. Any time it becomes necessary to excavate into the underlying rock formation to construct the access, level the well pad, excavate the reserve/blooie pit or bury the well tie pipeline a paleontological monitor shall be present during all such excavations.

32. Any livestock control facilities and/or rangeland improvements impacted during this operation will be replaced or repaired to at least their condition prior to these activities. Cattleguards associated with access roads need to be maintained (i.e. kept cleaned of sediment to a depth that maintains their function). Structural integrity of fences and cattleguards affected by proposed activities must be maintained at all times.

33. All reserve pits must be fenced with woven wire or 4-strand barbwire with reinforced corners strung to the ground surface to prevent livestock from entering the pits. On-site silt retention methods need to be designed and implemented for all roads and well pads to minimize silt loads into the watersheds of nearby stock ponds.

34. All permanent (onsite for six [6] months or longer) structures, facilities and equipment on BLM lands placed above ground shall be painted Munsell Soil Color Chart *Juniper Green* within six months of installation.

COMPLIANCE/MONITORING: On-going compliance inspections and monitoring of drilling, production and post-production activities will be conducted by White River Field Office staff during construction of well pad and access road. Specific mitigation developed in this Environmental Assessment and the lease terms and conditions will be followed. The Operator will be notified of compliance related issues in writing, and depending on the nature of the issue(s), will be provided 30 days to resolve such issues.

NAME OF PREPARER: Brett Smithers

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

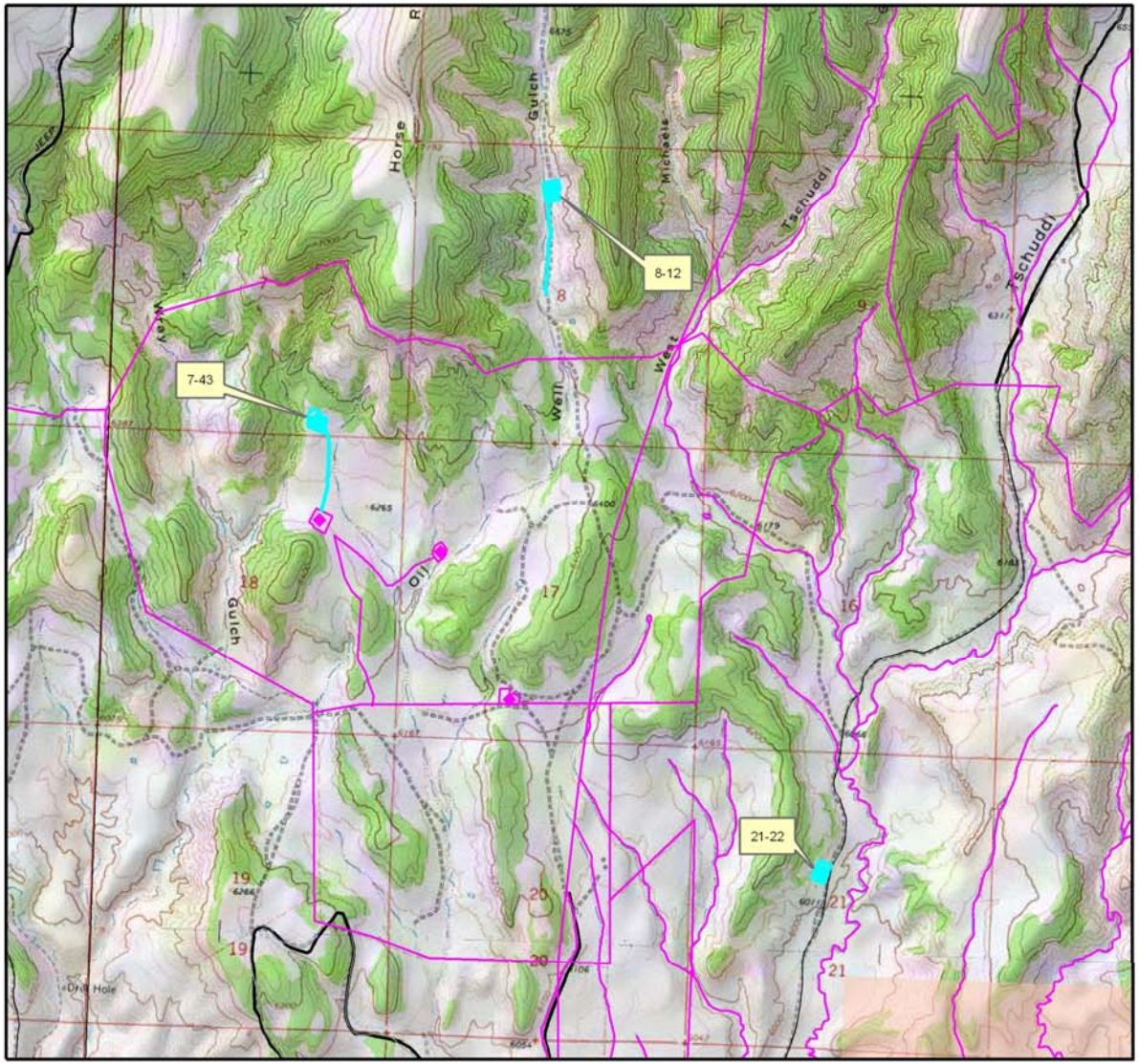
SIGNATURE OF AUTHORIZED OFFICIAL: Kent E. Walter

Field Manager

DATE SIGNED: 04/06/07

ATTACHMENTS: General Location Map of the Proposed Action.

CO-110-2007-073-EA



Legend

- Projects: polygon
- Projects: line
- Projects: point

N

4/6/07

0 0.15 0.3 0.6 0.9 Miles