

U.S. Department of the Interior
Bureau of Land Management
Little Snake Field Office
455 Emerson Street
Craig, CO 81625-1129

ENVIRONMENTAL ASSESSMENT

EA-NUMBER: DOI-BLM-CO-N010-2011-0074-EA

CASEFILE/PROJECT NUMBER/LEASE NUMBER: COC 64881

PROJECT NAME: Weber Well #32-4

LEGAL DESCRIPTION: SWNE, Sec. 4, T. 6 N., R. 92 W., 6th PM, Moffat County

APPLICANT: Quicksilver Resources

PLAN CONFORMANCE REVIEW: The proposed action is subject to the following plan:

Name of Plans: Little Snake Resource Management Plan and Record of Decision (ROD) approved on April 26, 1989; and the Colorado Oil and Gas Leasing & Development Environmental Impact Statement (EIS) and the ROD signed on November 5, 1991.

Remarks: The proposed Weber Well #32-4 would be located within Management Unit 1 (Little Snake Resource Management Plan). The objectives of Management Unit 1 are to realize the potential for development of coal, oil, and gas resources.

The proposed action was reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3). The proposed action is in conformance with the objectives for this management unit.

NEED FOR PROPOSED ACTION: To provide for the development of oil and gas resources and to supply energy resources to the American public.

PUBLIC SCOPING PROCESS: The action in this EA is included in the NEPA log posted on the LSFO web site: http://www.blm.gov/co/st/en/BLM_Information/nepa/lsofo.html. The Notice of Staking (NOS) has been posted in the public room of the Little Snake Field Office for a 30-day public review period beginning April 14, 2011 when the NOS was received, and may be viewed during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays.

One (1) letter of comment was received after the 30-day public review period. The primary concerns put forth in the letter were groundwater, surface water, and hazardous & solid waste management. These concerns have been addressed within the analysis and/or attached as Conditions of Approval.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES: The proposed action would be to approve one Application for Permit to Drill (APD) submitted by Quicksilver Resources. The operator proposes to drill one oil well on private land over Federal minerals located in the SWNE, Sec. 4, T. 6 N., R. 92 W 6th P.M. An APD has been filed with the LSFO for the Weber Well #32-4. The APD includes drilling and surface use plans that cover mitigation of impacts to vegetation, soil, surface water, and other resources. Mitigation not incorporated by Quicksilver Resources in the drilling and surface use plan would be attached by the BLM as Conditions of Approval to an approved APD.

The proposed well would be located approximately 10.5 miles west from the town of Craig, CO off of Moffat County Road 173. Construction work would be planned to start during the spring of 2011 and the estimated duration of construction and drilling for the well would be 30 days. 1,365 feet of new access road would be constructed. All access road would be on lease and would have a maximum width of disturbance of 30 feet resulting in an 18 foot running surface. Road construction would result in 1.5 acre of disturbance.

The proposed well pad would be cleared of all vegetation and leveled for drilling. Topsoil and native vegetation would be stockpiled for use in reclamation. Approximately 2.5 acres would be disturbed for construction of the well pad. This would include the 300' by 200' well pad, the topsoil, and subsoil piles. A closed loop system would be utilized and no reserve pit would be authorized. A 100' by 50' cuttings pit would be constructed on the well pad to hold drill mud and cuttings. Drill cuttings would be buried in the cuttings pit when dry. If the well is a producer, cut portions of the well site would be backfilled and unused portions of the well site would be stabilized and re-vegetated; interim reclamation would reclaim approximately 1.5 acres of disturbance. If the oil well proves unproductive, it would be properly plugged and the entire well pad and access road would be reclaimed.

Quicksilver Resources did not include plans for sales pipeline with the APD.

The total surface disturbance for the proposed action would be 4.0 acres.

NO ACTION ALTERNATIVE: The “no action” alternative is that the well would not be permitted and therefore the well would not be drilled. Quicksilver Resources holds a valid and current oil and gas lease for the area where the proposed Weber Well #32-4 would be located. Under leasing contracts, the BLM has an obligation to allow mineral development if the environmental consequences are not irreversible or too severe. The APD process is designed to overcome the no action situation of not accepting the APD through the mitigation of predicted environmental consequences. Since the proposed action is consistent with the ROD and the Oil and Gas Leasing EIS the no action alternative will not be analyzed further in this EA.

AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES/MITIGATION MEASURES

For the following resources and issues, those brought forward for analysis will be addressed below.

Resource/Issue	N/A or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Air Quality			SW 05/06/11
Areas of Critical Environmental Concern	KSD 05/09/11		
Environmental Justice/ Socio-Economics			LM 05/12/11
Cultural Resources			EM 05/13/11
Flood Plains	ELS 04/20/11		
Fluid Minerals			EMO 05/03/11
Forest Management	SW 05/06/11		
Hydrology/Ground			EMO 05/03/11
Hydrology/Surface	ELS 04/20/11		
Invasive/Non-Native Species			SW 05/06/11
Native American Religious Concerns			EM 05/13/11
Migratory Birds			DA 05/06/11
Paleontology			EMO 05/03/11
Prime and Unique Farmland	ELS 04/20/11		
Range Management	ML 05/18/11		
Realty Authorizations	LM 05/12/11		
Recreation/Transportation	KSD 05/09/11		
Soils	ELS 04/20/11		
Solid Minerals		JAM 5/10/11	
T&E and Sensitive Animals			DA 05/06/11
T&E and Sensitive Plants			JHS 05/23/11
Upland Vegetation	ML 05/18/11		
Visual Resources	KSD 05/09/11		
Water Quality - Surface			ELS 5/6/11
Wetlands/Riparian Zones	ELS 04/20/11		
Wild and Scenic Rivers	KSD 05/09/11		
Wild Horse & Burro Mgmt	SW 05/17/11		

Wilderness Characteristics/WSA's	KSD 05/09/11		
Wildlife - Aquatic	SW 05/26/11		
Wildlife - Terrestrial			DA 05/06/11

AIR QUALITY

Affected Environment: There are five federal Class I areas within 100 kilometers of the Little Snake Resource Management Area (LSRMA) boundary, all of which occur in Colorado. There are no federal Class I areas in Utah or Wyoming within 100 km of the LSRMA boundary. There are no non-attainment areas nearby that would be affected by the proposed action.

Environmental Consequences: Short term, local impacts to air quality from dust would result during and after well pad construction. Drilling operations produce air emissions such as exhaust from diesel engines that power drilling equipment. Air pollutants could include nitrogen oxides, particulates, ozone, volatile organic compounds, fugitive natural gas, and carbon monoxide. Gas flaring reduces the health and safety risks in the vicinity of the well by burning combustible and poisonous gases like methane and hydrogen sulfide.

At a regional scale, atmospheric dust, caused by destabilization of soil as a result of land use changes coupled with drought conditions, is receiving increased attention for its ability to alter alpine environments. Dust covered snow melts faster because it can absorb more solar energy, which affects snowpack conditions and can result in earlier and faster spring runoff events. The Colorado Plateau has been identified as a primary dust source for several recent alpine dust events on the Western Slope of Colorado. Areas of low annual precipitation, little to no vegetation cover, and an available supply of sediment are of primary concern for mitigation of expanding or new sources of dust.

Mitigation Measures: Retaining as much vegetative cover as possible during the project and/or reclaiming and covering disturbed areas shortly following excavation should help keep localized dust down during dry periods.

Name of specialist and date: Shawn Wiser 05/06/11

CULTURAL RESOURCES

Affected Environment: Cultural resources, in this region of Colorado, range from late Paleo-Indian to Historic. For a general understanding of the cultural resources in this area of Colorado, see *An Overview of Prehistoric Cultural Resources, Little Snake Resource Area, Northwestern Colorado*, Bureau of Land Management Colorado, Cultural Resources Series, Number 20, *An Isolated Empire, A History of Northwestern Colorado*, Bureau of Land Management Colorado, Cultural Resource Series, Number 2 and *Colorado Prehistory: A Context for the Northern Colorado River Basin*, Colorado Council of Professional Archaeologists.

Environmental Consequences: The proposed project, Weber #32 Well Pad and Access Road, has undergone Class III cultural resource surveys:

Davenport, Barbara

2011 Class III Cultural Resources Inventory for the Proposed Weber #32-4 well location and short access (original and alternate-1945), Moffat County, Colorado. GRI Project No 2011-32. BLM-LSFO# 11.1.2011. Grand River Institute, Grand Junction, Colorado.

The study identified no cultural resources and there will be no historic properties effected. The proposed project may proceed as described with the following standard mitigative measures in place.

Mitigative Measures:

The following standard stipulations apply for this project:

1. Any cultural and/or paleontological (fossil) resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and the authorized officer will make any decision as to proper mitigation measures after consulting with the holder.
2. The operator is responsible for informing all persons who are associated with the 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 encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. 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 identified area can be used for project activities again; and
 - Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and 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. 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 costs. 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.

Name of specialist and date: Ethan Morton 05/13/11

ENVIRONMENTAL JUSTICE/SOCIO-ECONOMIC

Affected Environment: Executive Order 12898 (20) requires federal agencies to assess projects to ensure there are no disproportionately high or adverse environmental, health, or safety effects on minority and low-income populations. Minorities comprise a small proportion of the population residing inside the boundaries of the Little Snake Field Office. Oil and gas exploration and production, coal mining, as well as livestock operations and hunting are the main economic activities of the area.

Environmental Consequences: The local economy may have some direct but minimal, short-term benefit from support services to drilling crews, but only a small number of people would be affected. Surface owners within the project area will be paid land use fees. Indirect benefits to the surrounding economy may occur from the drilling of additional exploration or development wells in the project area. The indirect effects could include effects due to overall employment opportunities related to the oil and gas and service support industry in the region as well as the economic benefits to state and county governments related to royalty payments and severance taxes. The project area is already surrounded by ongoing oilfield activities, so new production would likely cause minimal impact, either beneficial or adverse, to the present socioeconomic environment. Generated revenue from oil and gas production, as the result of successful drilling programs would affect only a small number of people and not necessarily people from the socioeconomic area in the vicinity of the project.

It is not likely that the proposed project activities would generate high levels of concern, opposition, or dissatisfaction among local residents. A small, temporary increase in activity and noise disturbance may occur in rural subdivisions and areas primarily used for grazing or hunting. No minority or low income populations would be directly affected in the vicinity of the proposed action.

Mitigative Measures: None.

Name of specialist and date: Louise McMinn 05/12/11

FLUID MINERALS

Affected Environment: The proposed well would be in favorability zone 4 (highest for oil and gas potential). This well would penetrate the Mesa Verde, Mancos, and Niobrara Formations.

Environmental Consequences: The casing and cementing program would be adequate to protect all of the resources identified above. All coal seams and fresh water zones would also be protected. The blow out preventer (BOP) system would be adequately sized. All of these zones would be cased off.

Mitigative Measures: None.

Name of specialist and date: Marty O'Mara 05/03/2011

INVASIVE/NON-NATIVE SPECIES

Affected Environment: Invasive and noxious weeds are present in the area. Invasive annuals such as downy brome (cheatgrass), halogeton, blue mustard and yellow alyssum are common, occupying disturbed areas. Invasive annual weeds are typically established on disturbed and high traffic areas whereas biennial and perennial noxious weeds are less common in occurrence. Downy brome and halogeton are on the Colorado List C of noxious weeds and efforts to control halogeton are intensifying in this area. Colorado List B noxious weeds that are present within the surrounding areas include Russian knapweed, hoary cress (whiteweed), Canada thistle and biennial thistles. The BLM is in cooperation with the Moffat County Cooperative Weed Management program to employ the principals of Integrated Pest Management to control noxious weeds on public lands. Additionally, the BLM, Moffat County, livestock operators, pipeline companies and oil and gas operators have formed the Northwest Colorado Weed Partnership to collaborate efforts on controlling weeds and finding the best integrated approaches to achieve results.

Environmental Consequences: The surface disturbing activities and associated traffic involved with construction of these wells, pipelines, support infrastructure and subsequent activities would create an environment and provide a mode of transport for invasive species and other noxious weeds to become established. Construction equipment and any other vehicles brought onto the site can introduce weed species. Wind, water, recreation vehicles, livestock and wildlife would also assist with the distribution of weed seed into the newly disturbed areas. The annual invasive weed species (downy brome, yellow alyssum, blue mustard and other annual weeds) occur on adjacent areas and would occupy the disturbed areas. The bare soils and the lack of competition from a perennial plant community would allow these weed species to grow unchecked and could affect the establishment of seeded plant species. Establishment of perennial grasses and other seeded plants is expected to provide the necessary control of invasive annual weeds within 2 or 3 years. Additional seeding treatments of the disturbed areas may be required in subsequent years if initial seeding efforts are not successful.

The perennial and biennial noxious weeds in the area are less frequently established on the uplands but some potential exists for their establishment in draws and swales or areas that would

collect additional water. The largest concern in the project area would be for these species to become established and not be detected, providing seed which can be moved onto adjacent rangelands. The operator would be required to control any invasive and/or noxious weeds that become established within the disturbed areas involved with drilling and operating the well.

Mitigative Measures: Mitigation attached as Conditions of Approval to minimize disturbance and obtain successful reclamation of the disturbed areas, as well as weed control utilizing integrated practices, including herbicide applications, would help to control the noxious weed species. All principles of Integrated Pest Management should be employed to control noxious and invasive weeds on public lands.

Name of specialist and date: Shawn Wisner 05/06/11

MIGRATORY BIRDS

Affected Environment: BLM Instruction Memorandum No. 2008-050 provides guidance towards meeting BLM's responsibilities under the Migratory Bird Treaty Act (MBTA) and Executive Order (EO) 13186. The guidance emphasizes management of habitat for species of conservation concern by avoiding or minimizing negative impacts and restoring and enhancing habitat quality. The LSFO provides both foraging and nesting habitat for a variety of migratory bird species. Several species on the USFWS's Birds of Conservation Concern (BCC) List occupy these habitats within the LSFO.

Native plant communities in the general area are comprised of sagebrush with an understory of grasses and forbs. A variety of migratory birds may utilize this vegetation community within the project area during the nesting period (May through July) or during spring and fall migrations. The project area contains potential nesting and/or foraging habitat for the following USFWS 2008 Birds of Conservation Concern: golden eagle, Brewer's sparrow, sage sparrow, sage thrasher and loggerhead shrike. The closest golden eagle nest is .40 miles away from the well site and this species may hunt for prey in the general area.

Environmental Consequences: The Proposed Action would disturb 4.0 acres of migratory bird habitat. Although this disturbance would be minimal on a landscape level, it would decrease patch size and may degrade habitat on a small scale. Indirectly, habitat effectiveness adjacent to well pads would be reduced as a result of noise and human activity during construction, drilling and completion activities. If drilling activities occur during the nesting season, there could be negative impacts to migratory bird species through nest destruction or increased stress leading to nest abandonment. However, since the proposed well site will only disturb 4.0 acres, these impacts would be minimal. Overall, the Proposed Action is not expected to have a measurable influence on the abundance or distribution of migratory birds at a regional scale.

Mitigative Measures: None.

Name of Specialist and Date: Desa Ausmus 05/06/11

NATIVE AMERICAN RELIGIOUS CONCERNS

Letters were sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Utes Tribal Council, Shoshoni Tribal Historic Preservation Officer, and the Colorado Commission of Indian Affairs in the spring of 2010 discussing upcoming projects the BLM would be working on in FY10 and FY11. Letters were followed up with phone calls. No comments were received (Letters on file at the Little Snake Field Office, Craig, Colorado).

Name of specialist and date: Ethan Morton 05/13/11

PALEONTOLOGY

Affected Environment: The geologic formation at the surface is the Tertiary age Browns Park Formation (Tbp). This formation has been classified a Class Ia formation for the potential for occurrence of scientifically significant fossils.

Environmental Consequences: Scientifically significant fossils are found abundantly within this formation (Armstrong & Wolney, 1989). The potential for discovery of significant fossils within this formation is considered to be high; however, potential for discovery of fossils through a surface survey on this location is considered low because of the specific facies of the Browns Park Formation. Potential for buried fossils is considered moderate to low. If any such fossils are located here, construction activities could damage the fossils and the information that could have been gained from them would be lost. The significance of this impact would depend upon the significance of the fossil. The proposed action could also constitute a beneficial impact to Paleontological resources by increasing the chances for discovery of scientifically significant fossils.

Mitigative Measures: Ceasing operations and notifying the Field Office Manager immediately upon discovery of a fossil during construction activities will effectively mitigate the potential impact to Paleontological resources. An assessment of the significance is made and a plan to retrieve the fossil or the information from the fossil is developed.

Standard Discovery Stipulation

"If cultural or Paleontological resources are discovered during exploration operations under this license, the licensee shall immediately notify the Field Office Manager and shall not disturb such discovered resources until the Field Office Manager issues specific instructions.

- a. Within 5 working days after notification, the Field Office Manager shall evaluate any cultural resources discovered and shall determine whether any action may be required to protect or to preserve such discoveries.

b. The cost of data recovery for cultural resources discovered during exploration operations shall be borne by the licensee, if the licensee is ordered to take any protective measures. Ownership of cultural resources discovered shall be determined in accordance with applicable law."

References

Armstrong, Harley J. and Wolney, David G., 1989, Paleontological Resources of Northwest Colorado: A Regional Analysis, Museum of Western Colorado, Grand Junction, CO, prepared for Bur. Land Management, Vol. I of V.

Miller, A.E., 1977, Geology of Moffat County, Colorado, Colo. Geol. Surv. Map Series 3, 1:126,720.

Name of specialist and date: Marty O'Mara 05/03/11

T&E ANIMAL SPECIES

Affected Environment: There are no ESA listed or proposed species that inhabit or derive important benefit from the project area. Critical habitat for the razorback sucker, Colorado pikeminnow, bonytail chub and humpback chub is located downstream of the proposed well site.

The general area provides habitat for greater sage-grouse, a BLM sensitive species and a candidate for ESA listing. The closest active lek is over four miles from the Proposed Action area and therefore, sage-grouse nesting is not expected to occur in the vicinity of the proposed well site. Due to the amount of human development (houses) and the number of roads that exist in the immediate area, sage-grouse use of the habitat near the proposed well site is likely incidental.

Environmental Consequences:

Colorado River Fish

In May 2008, BLM prepared a Programmatic Biological Assessment (PBA) that addresses water depleting activities associated with BLM's fluid minerals program in the Colorado River Basin in Colorado. In response to BLM's PBA, the FWS issued a Programmatic Biological Opinion (PBO) (ES/GJ-6-CO-08-F-0006) on December 19, 2008, which determined that BLM water depletions from the Colorado River Basin are not likely to jeopardize the continued existence of the Colorado pike minnow, humpback chub, bonytail, or razorback sucker, and that BLM water depletions are not likely to destroy or adversely modify designated critical habitat.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated in January 1988. The Recovery Program serves as the reasonable and prudent alternative to avoid jeopardy and provide recovery to the endangered fishes by depletions from the Colorado River Basin. The PBO addresses water depletions associated with fluid minerals development on BLM lands, including water used for well drilling, hydrostatic

testing of pipelines, and dust abatement on roads. The PBO includes reasonable and prudent alternatives developed by the FWS which allow BLM to authorize oil and gas wells that result in water depletion while avoiding the likelihood of jeopardy to the endangered fishes and avoiding destruction or adverse modification of their critical habitat. As a reasonable and prudent alternative in the PBO, FWS authorized BLM to solicit a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual acre-feet depleted by fluid minerals activities on BLM lands.

This project will be entered into the Little Snake Field Office fluid minerals water depletion log which will be submitted to the Colorado State Office at the end of the Fiscal Year.

Greater Sage-grouse

Impacts to grouse species from oil and gas development are discussed in the Colorado Oil and Gas EIS (1991). Impacts include, but are not limited to, displacement into less suitable habitat, nest abandonment, destruction of nests and loss of habitat. Other impacts, such as habitat fragmentation and the spread of weedy plants can also degrade habitat. Since the proposed well site is over four miles from the closest active lek, greater sage-grouse breeding and nesting activities would not be impacted. The Proposed Action would alter 4.0 acres of grouse habitat. This disturbance would have minimal impacts to sage-grouse habitat, however, as development of the area continues, habitat patch size will be reduced, potentially impacting the quality of habitat. Increased development may lead to a decreased use of habitat by greater sage-grouse.

Mitigative Measures: None.

Name of Specialist and Date: Desa Ausmus 05/06/11

T&E AND SENSITIVE PLANTS

Affected Environment: There are no federally listed threatened or endangered or BLM sensitive plant species within or in the vicinity of the proposed well.

Environmental Consequences: None

Mitigation Measures: None

Name of Specialist and Date: Hunter Seim 05/23/11

WASTE, HAZARDOUS OR SOLID

Affected Environment: The Resource Conservation and Recovery Act (RCRA) of 1976 established a comprehensive program for managing hazardous wastes from the time they are produced until their disposal. U.S. Environmental Protection Agency (EPA) regulations define solid wastes as any "discarded materials" subject to a number of exclusions. The

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980 regulates mitigation of the release of hazardous substances (spillage, leaking, dumping, accumulation, etc.) or threat of a release of hazardous substances into the environment. Civil and criminal penalties may be imposed if the hazardous waste is not managed in a safe manner and according to regulations. The Colorado Department of Public Health & Environment (CDPHE) administers hazardous waste regulations for oil and gas activities in Colorado.

Environmental Consequence: The project would fall under environmental regulations that impact disposal practices and impose responsibility and liability for protection of human health and the environment from harmful waste management practices or discharges. The direct impact would be if a solid waste or hazardous material is discarded and contaminates land surface either by solid, semi-solid, liquid, or contained gaseous material. Hazardous, civil, and criminal penalties may be imposed if the waste is not managed in a safe manner, and according to EPA regulations.

Mitigative Measures: The project would be regulated under the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations, which are extremely stringent, as well as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that provides for the definition of hazardous substance, pollutant, and contaminant. The mitigation would include the stringent regulation of waste containment within the project area.

Name of specialist and date: Shawn Wiser 05/06/11

WATER QUALITY – GROUND

Affected Environment: According to the Colorado Decision Support Systems information, there is an active domestic water well located 0.25 miles from the proposed surface location. This domestic well (225' depth) is identified as "Permit No. 220746" and is located in the SENE Sec. 4, T6N, R92W.

Environmental Consequences: With the use of proper construction practices, drilling practices, and best management practices, no significant adverse impact to groundwater aquifers and quality would be anticipated to result from the proposed action. A geologic and engineering review was performed on the 8-point drilling plans to ensure that the cementing and casing programs adequately protect the down-hole resources.

Mitigative Measures: Onshore Order No. 2 requires that the Operator isolate and protect all fresh- to- moderately saline water (TDS < 10,000 PPM) that would be encountered during drilling from communication and contamination with other fluids. The Operator would be required to submit a report showing the depth and analysis of all groundwater encountered during drilling.

Quicksilver Resources will test domestic water wells located within ½ mile Weber #32-4 well. For wells located within ¼ mile of the drill site, full water well testing analysis and a pressure/volume drawdown test will occur. For wells located within ½ mile of the drill site, full

water well testing analysis will occur. These tests are for the purpose of determining any contamination from the drilling operation.

Quicksilver Resources will run open hole logs from surface to approximately 1200 feet for the purpose of detecting shallow natural gas.

Name of specialist and date: Marty O'Mara 05/03/11

WATER QUALITY – SURFACE

Affected Environment: There are no perennial surface waters in or near the proposed project area. Any surface runoff from the proposed project area would drain into Sand Spring Gulch, an intermittent tributary to the Yampa River. Water quality for all tributaries of the Yampa River (from a point immediately below the confluence with Elkhead Creek to a point immediately below the confluence with the Little Snake River) are use protected and must support Aquatic Life Warm 2, Recreation N, and Agricultural uses. There are no known water quality impairments or suspected water quality issues for waters influenced by the project area considered in the proposed action.

Environmental Consequences: Surface waters adjacent to or influenced by the proposed project areas are currently supporting classified uses. Increased sedimentation towards Sand Spring during spring runoff or from high intensity rainstorms is the most likely environmental consequence from the proposed action, particularly since the proposed pad site is situated on a slope. Although some sediment may be transported off site and could eventually reach perennial waters further downstream, the mitigation provided in the Surface Use Plan, Stormwater Plan, and the Conditions of Approval would reduce the potential for localized sedimentation caused by surface runoff.

Mitigation Measures: None.

Name of specialist and date: Emily Spencer 05/06/11

Reference: Colorado Department of Public Health and Environment Water Quality Control Commission. 2010. Regulations #33, 37, and 93. <http://www.cdphe.state.co.us/regulations/wqccregs/index.html>

WILDLIFE, TERRESTRIAL

Affected Environment: Native plant communities in the general area are comprised of sagebrush with an understory of grasses and forbs. These plant communities provide habitat for a variety of big game, small mammals, birds and reptiles. The proposed well site is located in elk and pronghorn severe winter habitat and mule deer critical winter habitat.

Environmental Consequences: Impacts to wildlife species from oil and gas development are discussed in the Colorado Oil and Gas EIS (1991). Impacts include, but are not limited to, displacement into less suitable habitat, increased stress and loss of habitat. These impacts are more significant during critical seasons, such as winter or reproduction. Big game species are often restricted to smaller areas during the winter months and may expend high amounts of energy to move through snow, locate food and maintain body temperature. Disturbances during the winter can displace big game, depleting much needed energy reserves and may lead to decreased over winter survival.

Mule deer, pronghorn and elk using winter range are likely to be disturbed by noise and human activity associated with well pad construction and drilling. These activities should not be permitted from December 1 to April 30 to prevent significant impacts to mule deer and elk.

Most small mammals, birds and reptiles using the project area would be capable of avoiding construction equipment and should not be directly harmed by these activities. Some burrowing animals may be killed by construction equipment. This should be considered a short-term negative impact that is not likely to harm populations of any species.

Mitigative Measures: CO-09 Big game winter range. No surface disturbing activities between December 1 and April 30 in order to prevent disturbance of big game using critical winter range.

To prevent long term impacts associated with noise, sound producing equipment (such as compressors or pump jacks) must be equipped with a hospital grade muffler or similar device which limits sound emissions to 60 decibels or less measured 100 feet from the source.

Name of Specialist and Date: Desa Ausmus 05/06/11

CUMULATIVE IMPACTS SUMMARY: Cumulative impacts may result from the development of the Weber Well #32-4 when added to non-project impacts that result from past, present, and reasonably foreseeable future actions. The potential exists for future oil and gas development throughout the area. Other past or existing actions near the project area that have influence on the landscape are wildfire, recreation, hunting, grazing, and ranching activities.

Surface disturbance associated with oil and gas activity would increase the potential for erosion and sedimentation. Contrasts in line, form, color, and texture from development would impact the visual qualities on the landscape.

Cumulative impacts to the plant communities within the lease and adjacent areas include an incremental reduction of continuity in the plant communities in terms of acreages that remain undisturbed. Loss of continuity results in smaller and smaller areas of undisturbed native vegetation and the potential for loss of integrity within the larger plant community. Fragmented plant communities can lose resilience to natural and man-made disturbance due to isolation of areas from seed sources necessary for proper age class distribution of plants, and subsequently, a greater opportunity for stressors such as drought to have a more severe impact on the plant community as a whole. The increased disturbance also makes native plant communities more susceptible to invasion by annual weeds as vectors for increasing weeds. Even with weed control measures applied, the potential for weeds to move further into undisturbed remnant areas increases as these remnants become smaller and more isolated from larger undisturbed areas.

Cumulative impacts to the livestock grazing operations in the area may be increased through the proposed action. This area has not received the rapid rate of energy development compared to other areas of NW Colorado. The development that has occurred in this area has yet to negatively affect livestock production. If continued growth occurs, the growth in wells, roads, and human activity has the potential to reduce the availability of forage in this area far beyond direct impacts caused by construction.

Habitat fragmentation from well pad construction and the associated roads have likely decreased the nesting suitability for migratory birds in the resource area. Ingelfinger (2001) found that roads associated with oil and gas development have a negative impact on passerine bird species. Bird densities were reduced within 100m of each road. Due to the amount of new road construction and an increase in traffic on these roads, passerine populations in the area are likely decreasing.

The cumulative impacts of additional wells and roads in the project area would continue to degrade habitat for the greater sage-grouse and Columbian sharp-tailed grouse. Fragmentation, mostly due to road construction, is an important factor contributing to a decrease in habitat quality. Disturbances such as higher traffic volume and other human activities also contribute to degradation of habitat quality. Continued oil and gas development would lead to decreased use of the habitat.

Although big game species are able to adapt to disturbances better than other wildlife, increased development would still have impacts to mule deer, elk, and antelope. Timing stipulations adequately protect big game species during critical times of the year; however, continued oil and gas development would lead to decreased use of the habitat due to increased human activity. A significant amount of vehicle traffic occurs with oil and gas development. Impacts to big game may be vehicle-animal collisions, as these are a major cause of mortality for big game species.

References:

Ingelfinger, F. 2001. The Effects of Natural Gas Development on Sagebrush Steppe Passerines in Sublette County, Wyoming. University of Wyoming, Laramie, WY.

STANDARDS:

STANDARDS FOR PUBLIC LAND HEALTH

In January 1997, Colorado BLM approved the Standards for Public Land Health. The five 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. Environmental analyses of proposed projects on BLM land must address whether the Proposed Action or alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions identified in the applicable Land Health Assessment (LHA). However, because no component of the Proposed Action would involve BLM surface lands, and LHA does not apply, and conformance with the land health standards is not evaluated in this EA.

PERSONS/AGENCIES CONSULTED: Uintah and Ouray Tribal Council, Colorado Native American Commission, Colorado State Historic Preservation Office.

SIGNATURE OF PREPARER: /s/ Shawn Wiser

DATE SIGNED: 06/02/11

SIGNATURE OF ENVIRONMENTAL REVIEWER: /s/ Barb Blackstun

DATE SIGNED: 06/02/11

Attachments: Site Map

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
DOI-BLM-CO-N010-2011-0074-EA

Based on the analysis of potential environmental impacts contained in the EA and all other available information, I have determined that the proposal and the alternatives analyzed do not constitute a major Federal action that would adversely impact the quality of the human environment. This determination is based on the following factors:

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests or the locality. The physical and biological effects are limited to the Little Snake Resource Area and adjacent land.
2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.
3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas or designated Areas of Critical Environmental Concern.
4. There are no highly controversial effects on the environment.
5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.
6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State or local natural resource related plans, policies or programs.
7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.
8. Based on previous and ongoing cultural surveys and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.
9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
DOI-BLM-CO-N010-2011-0074-EA

10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

I have reviewed the direct, indirect and cumulative effects of the proposed activities documented in the Quicksilver Weber Well #42-3 EA No. DOI-BLM-CO-N010-2011-0074-EA. I have also reviewed the project record for this analysis and the impacts of the proposed action and alternatives as disclosed in the Alternatives and Environmental Impacts sections of the EA. Based upon a review of the EA and the supporting documents, I have determined that the project is not a major federal action and will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. Because there would not be any significant impact, an environmental impact statement is not required.

SIGNATURE OF AUTHORIZED OFFICIAL: /s/ Jennifer Maiolo for Field Manager

DATE SIGNED: 06/03/11

Decision Record
DOI-BLM-CO-N010-2011-0074-EA

DECISION AND RATIONALE:

I have determined that approving this APD is in conformance with the approved land use plan. It is my decision to implement the project with the mitigation measures provided in the Application for Permit to Drill and the Conditions of Approval.

MITIGATION MEASURES: The mitigation measures for this project are found in the file room of the Little Snake Field Office. The APD 12-point surface use plan, well location maps, and the Conditions of Approval are found in the well case file labeled COC 64881 Weber Well #32-4.

COMPLIANCE PLAN(S):

Compliance Schedule

Compliance will be conducted during the construction phase and drilling phase to insure that all terms and conditions specified in the lease and the approved APD are followed. In the event a producing well is established, periodic inspections as identified through the Inspection and Enforcement Strategy and independent well observations will be conducted. File inspections will include a review of all required reports and the Monthly Report of Operations will be evaluated for accuracy.

Monitoring Plan

The well location and access road will be monitored during the term of the lease for compliance with pertinent Regulations, Onshore Orders, Notices to Lessees, or subsequent COAs until final abandonment is granted; monitoring will help determine the effectiveness of mitigation and document the need for additional mitigative measures.

Assignment of Responsibility

Responsibility for implementation of the compliance schedule and monitoring plan will be assigned to the Fluid Mineral staff in the Little Snake Field Office. The primary inspector will be the Petroleum Engineering Technician, but the Petroleum Engineer, Natural Resource Specialist, Realty Specialist, and Land Law Examiner will also be involved.

Administrative Review or Appeal Opportunities

This decision is effective upon the date the decision or approval by the authorized officer. Under regulations addressed in 43 CFR Subpart 3165, any party adversely affected has the right to appeal this decision. An informal review of the technical or procedural aspects of the decision may be requested of this office before initiating a formal review request. You have the right to request a State Director review of this decision. You must request a State Director review prior to filing an appeal to the Interior Board of Land Appeals (IBLA) (43CFR 3165.4).

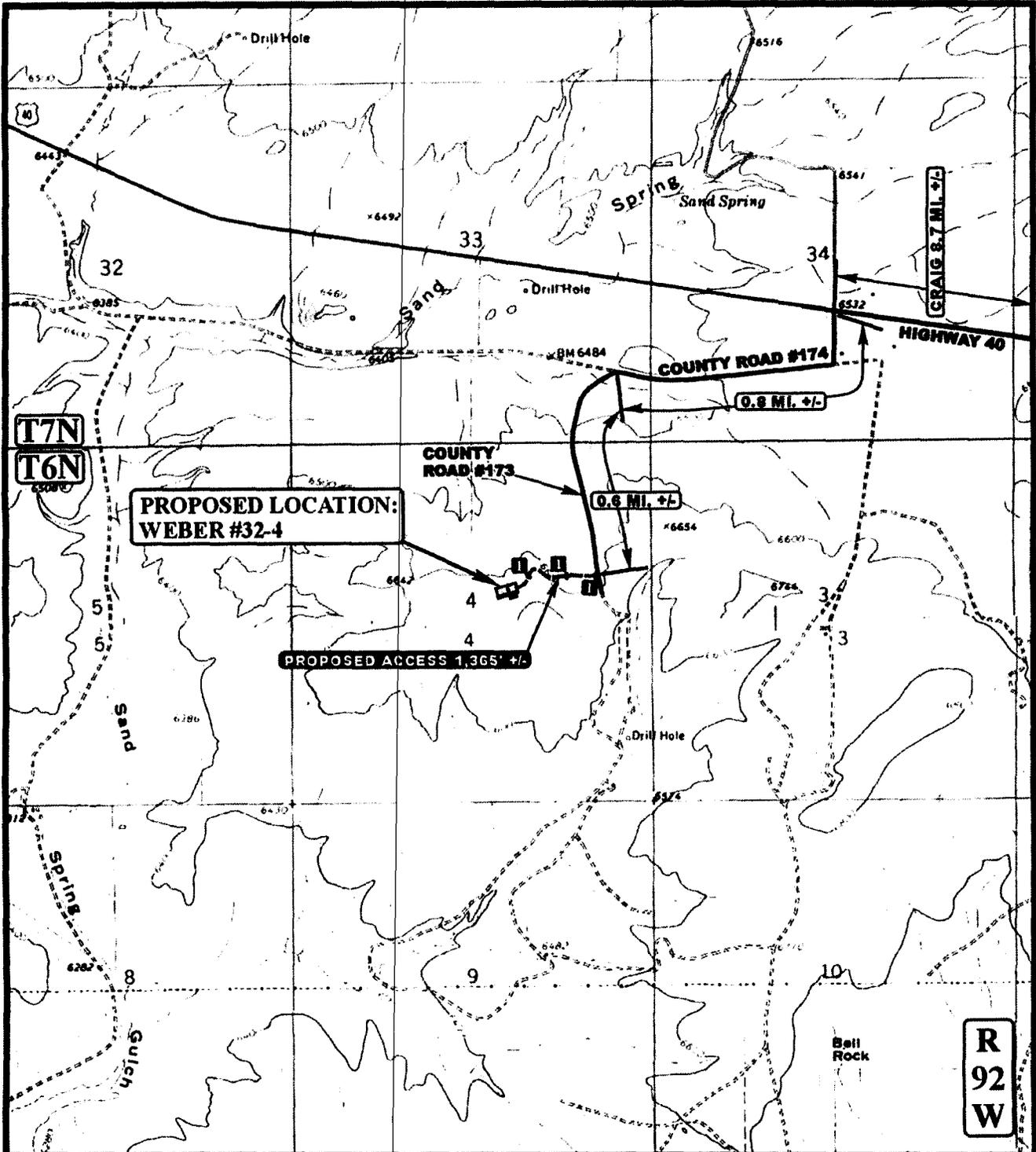
If you elect to request a State Director Review, the request must be received by the BLM Colorado State Office, 2850 Youngfield Street, Lakewood, Colorado 80215, no later than 20 business days after the date the decision was received or considered to have been received. The request must include all supporting documentation unless a request is made for an extension of the filing of supporting documentation. For good cause, such extensions may be granted. You also have the right to appeal the decision issued by the State Director to the IBLA.

Contact Person

For additional information concerning this decision, contact Shawn Wisser, Natural Resource Specialist, Little Snake Field Office, 455 Emerson Street, Craig, CO 81625, Phone (970) 826-5086.

SIGNATURE OF AUTHORIZED OFFICIAL: /s/ Jennifer Maiolo for Field Manager

DATE SIGNED: 06/03/11



LEGEND:

- EXISTING ROAD
- PROPOSED ACCESS ROAD
- 18' CMP REQUIRED

QUICKSILVER RESOURCES, INC.

WEBER #32-4
SECTION 4, T6N, R92W, 6th P.M.
2189' FNL 2094' FEL



Utah Engineering & Land Surveying
 85 South 200 East Vernal, Utah 84078
 (435) 789-1017 * FAX (435) 789-1813



TOPOGRAPHIC MAP
 04 MONTH 08 DAY 11 YEAR
 SCALE: 1" = 2000' DRAWN BY: Z.L. [REVISED: 04-25-11]

