

**United States Department of the Interior
Bureau of Land Management**

Environmental Assessment

DOI-BLM-CO-S050-2013-0004 EA

August 2013

Prince Albert Mine Plan of Operations

Location: West Montrose County

**U.S. Department of the Interior
Bureau of Land Management
Uncompahgre Field Office
2465 South Townsend Avenue
Montrose, CO 81401
Phone: (970) 240-5300**



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Montrose, CO 81403**

ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-S050-2013-0004 EA

CASE FILE / PROJECT NUMBER: COC - 75092

PROJECT NAME: Prince Albert Mine Plan of Operations

PLANNING UNIT: San Juan/San Miguel Planning Area

LEGAL DESCRIPTION: T. 48 N., R. 17 W., Sections 31 and 32, NMPM

APPLICANT: Rimrock Exploration and Development, Inc. (Rimrock)

INTRODUCTION and BACKGROUND

The Prince Albert Mine Plan of Operations (Plan) area is located 3 miles west of the old site of Uravan and about 15 miles northwest of Nucla, Colorado, on Club Mesa, above the confluence of the San Miguel and Dolores Rivers in western Montrose County, Colorado (Appendix A Maps 1 and 2, Photo 1; and The Plan of Operations (Rimrock, 2012)). The project involves the unpatented mining claims Prince Albert #1 to #8, #10, #11 and #15 under control of Rimrock (Appendix A, Table 1).

On May 24, 2005, Rimrock submitted a 43 CFR 3809 (3809) mining notice to BLM and a Notice of Intent (NOI) to the Colorado Division of Minerals and Geology, the predecessor of the Colorado Division of Reclamation, Mining and Safety (CDRMS), to conduct exploration drilling. Several modifications to the mining notice occurred over the next several years. The mining notice permit allows up to a total of 5.0 acres of disturbance and 999 tons of non-commercial ore to be shipped for testing.

On August 11, 2011, Rimrock submitted a draft Plan to expand their existing 3809 mining notice level operation over the 5 acre regulatory limit. On October 23, 2012, Rimrock submitted a revised, updated Plan after obtaining approval of CDRMS's 110(d) mining permit including the Environmental Protection Plan (EPP) (Rimrock, 2012).

CDRMS prospecting permit P-2005-021 will remain in effect for exploration drilling and CDRMS 110(d) mining permit M-2011-040 will be in effect for mining related activities. The mining permit can be viewed online at <http://drmsweblink.state.co.us>. Because the 3809

regulations require one permit per project area, BLM Plan permit COC-75092, if approved, will replace mining notice permit COC-68758 for both exploration and mining.

The mining and exploration activity proposed in the Plan would be completed as needed to locate and extract uranium and vanadium ore bearing rock from the Salt Wash Member of the Jurassic aged Morrison Formation. This phased approach would result in less surface disturbance and lower operating costs in the event that uranium processing mills are unavailable or the project becomes unprofitable.

Access to the mine site uses Colorado Highway 141, Montrose County (MC) EE22 (Long Park Road) and MC Road U16. The mine site is located adjacent to MC Road U16. No additional mine access roads are proposed at this time. The existing on-site road will be maintained as needed.

PURPOSE and NEED FOR THE ACTION

The applicant submitted a mining Plan of Operations as required by 43 CFR 3809.11 to expand an existing mining notice to allow for the continued development of their uranium and vanadium mining operation on mining claims located under the Mining Law of 1872. In order to mine more than 999 tons of ore and expand the operation to more than 5 acres, the applicant must have an approved Plan from the BLM.

The BLM need is to respond to the submitted Plan which expands the operations conducted under an approved Notice.

The BLM's purpose is to decide whether to approve the Plan as submitted, disapprove the Plan, or approve the proposed Plan with mitigation or changes to prevent unnecessary or undue degradation of public lands (43 CFR 3809.411(d)).

DESCRIPTION of PROPOSED ACTION and ALTERNATIVES

Proposed Action:

The Plan of Operations proposes to continue with existing operations, expand mining activity, and plan for additional mineral exploration access and drilling work over a 10-year period (Rimrock, 2012). Surface disturbance is proposed to increase to about 11 acres of which about 8.3 acres involve the mine site and 2.7 acres involve exploration related disturbance. The current project's surface disturbance includes about 1.5 acres of existing mine disturbance and less than 1 acre of exploration disturbance on a mining notice permit that has authorized up to a total of 4.7 acres and the excavation and non-commercial shipping of up to 999 tons of ore.

Proposed mining activity expansion would increase the output of uranium and vanadium ore to a production level of between 5 and 75 tons per day and continue the surface exploration drilling program. The mine could potentially operate up to two shifts per day seven days per week, with two to four employees on each work shift, or six to eight people employed at the mine site. The

mine is expected to operate for up to ten years if mineable reserves are expanded through further exploration by surface and underground drilling.

The existing mine portal entry decline would remain at its present 10 foot by 10 foot dimension. Two 20 foot by 8 foot by 8 foot containers are proposed to house a mining equipment maintenance shop, equipment and materials storage unit, and/or a mine office.

Ore would be loaded into trucks with a front-end loader and hauled offsite for processing, with approximately twenty haul trips per month. Ore processing would likely be conducted at Energy Fuels White Mesa Mill at Blanding, Utah, approximately 128 miles from the mine site. In the future, ore could be taken to the proposed Energy Fuels Piñon Ridge Mill, in Paradox Valley, Colorado, approximately 26 miles from the mine site (see Photo 1 of Appendix A).

It is not anticipated that either MC U16 or EE22 would need any improvements or upgrading. In the event that county road access improvement is necessary, any upgrading would be completed with the approval of Montrose County, and may include improvements such as providing proper drainage and/or resurfacing for all-weather use along with the incorporation of culverts, water bars, ditching and gravel.

The proposed mining activity involves two main expansion components:

- 1) expansion of the underground excavations for access development and ore production
- 2) expansion of the surface disturbances associated with a temporary uranium ore storage area, permanent rock stockpiles, a temporary equipment maintenance and materials storage area, temporary salvaged growth medium stockpile, and temporary and permanent surface water control structures.

Consistent with the current operational procedures, the Plan proposes site preparation to remove shrubs and trees from the affected areas using a dozer and/or a backhoe. Minor grading may also be required. Up to six inches of topsoil or growth medium would be stockpiled for reclamation purposes. A temporary, 0.4 acre, 10-foot high, salvaged growth medium storage stockpile area is proposed (Proposed Mine Plan Map, page 14). Reclamation work would use the salvaged growth medium stockpile to cover disturbed areas for re-vegetation preparation. Structural erosion control features such as riprap, silt fences, and straw-bale or excelsior velocity-check barriers would be implemented as needed to minimize erosion. The salvaged growth medium stockpile would be seeded with the specified BLM seed mix (see the Plan of Operations; Rimrock, 2012, section 7.10) at an appropriate interval to reduce erosion and loss of material.

Uranium ore from the mine would continue to be placed in a stockpile on the surface prior to shipment to the milling facility. As part of the existing BLM permit COC-68758, the ore stockpile location at the mine site has been constructed on a large outcropping of sandstone, and consists of a 40 foot by 90 foot stockpile area, 12 – 15 feet high, and a down-gradient sump pit. Sediments that accumulate in the ore stockpile sump from runoff would be periodically removed using a skid steer loader and deposited on the ore stockpile for shipment to the milling facility (Rimrock, 2012, section 4.2.8, p. 21).

Mine rock stockpiles consist of rock from underground workings that do not meet cut-off grade requirements and consists of sandstone and mudstone of the Morrison Formation. The existing rock stockpile located north of the mine portal was deposited during mine development work conducted under CDRMS NOI P-2005-21 and BLM mining notice permit COC-68758. The Plan proposes to expand this 15 foot high rock stockpile horizontally by 1 acre from about 0.2 acres to about 1.2 acres (Proposed Mine Plan Map, page 14). A second rock stockpile about 12 feet high and 0.5 acres in size could be developed under the expanded mine operation depending upon the overall size of the ore resource and the economics associated with accessing that resource from one location. This rock stockpile would be located southwest of the mine portal and is labeled as the Secondary Dump. Between the two rock stockpiles, there could be up to 40 to 60 tons of rock placed per day.

The two rock stockpiles would be constructed with a 3:1 [Horizontal length: Vertical height (H:V)] slope as material is excavated from underground and brought to the surface. The rock would be dumped from the underground haul trucks along the forward edge of the pile as it advances, then spread and compacted with a skid steer or mid-sized wheel loader. This rock placement method would result in rock stockpiles that are in a final slope configuration for reclamation.

Silt fences and berms would be installed for erosion control and storm water runoff control. All storm water is engineered to remain on site and drainage from all affected areas would run into water retention ponds capable of holding a 10-year, 24-hour precipitation event. Any volume of runoff from the ore pad sump pond, south pond or central pond that exceeds the design limitations would run down the mine access decline and be contained within the underground workings.

Surface drainage (storm water run-off and snow melt) would be diverted into one of four proposed detention ponds. One pond, the Ore Pad Sump is located directly down gradient of the ore stockpile. This containment pond is approximately 15 feet by 24 feet by a maximum depth of 2 feet. The other three ponds (labeled North, Central, and South Detention Pond on and the Proposed Mine Plan Map, below) are sedimentation ponds at three locations down gradient of potentially disturbed areas that are not in the ore storage and handling area. The sedimentation ponds are designed to contain a 10-year, 24- hour precipitation event. The North Detention Pond, with a capacity of 6,370 cubic feet (24 feet by 50 feet by a maximum depth of 2.3 feet), would collect runoff from the Primary Rock Pile. The Central Detention Pond, with a capacity of 9,255 cubic feet (35 feet by 40 feet by a maximum depth of 3 feet), is located northeast and down gradient of the mine portal and ore handling areas and would collect runoff that is diverted around the ore storage and handling area and from the disturbed areas between the Primary and Secondary Rock Piles. The South Detention Pond, with a capacity of 15,009 cubic feet (15 feet by 120 feet by a maximum of 3 feet), would collect runoff from the Secondary Rock Pile and the future maintenance and office location and 10 foot high topsoil storage stockpile area southwest of the Secondary Rock Pile. These ponds would remain throughout the life of the active mine, and the initial period after reclamation, until adequate vegetation has been established over the newly disturbed areas.

Details of mine facilities and equipment in addition to the rock and topsoil stockpiles, ore storage area and storm water management structures are listed in the Plan of Operations (Rimrock, 2012, section 4.2.11, Table 3A) and include ventilation holes, a multi-use trailer, up to three, 500 gallon or possibly one, 5000 gallon water storage tank(s), three above-ground powder magazines, a 0.04 acre service drop area, and a cargo van that would provide storage for oil and mine equipment. The service drop area would be accessed by an existing exploration drill road.

The operation would use up to 200 gallons of water per day over the six month annual operational period, or 0.074 acre-feet per year. Over the 10 year plan's time frame this amounts to 0.74 acre-feet. The water is used in the underground operations by exploration and development drilling activity. Rarely is water needed for exploration drilling outside of the mine operations when damp rock is encountered that needs additional water to flush mud out the drill bit.

One 7-foot diameter shaft or borehole is proposed as a secondary escape way and ventilation shaft for the underground workings. This borehole would intersect the underground workings from the surface. For mine escape utility, a ladder having at maximum platform landings every 30 feet would be installed to allow workers to exit the mine safely. An alternative safety option provides for a small head frame and hoist system to be erected on top of the borehole.

Five smaller (2 to 4 foot in diameter) ventilation boreholes may be required to reduce the workers exposure to hazardous radon gas and diesel equipment exhaust emissions. Locations of these boreholes would depend on mine development requirements. The ventilation boreholes would be steel cased for the first 10 feet and sealed at the surface. Deeper additional casing may be installed and grout sealed during placement. See the Plan of Operations for alternative construction procedures (Rimrock, 2012, section 4.2.7). A work pad area 66 feet by 66 feet would be cleared on the ground surface to accommodate the pilot-hole drill rig, a 20 foot by 20 foot concrete pad (if necessary), and the main borehole drilling equipment. This same area would be used for the installation of the ventilation fan and a portable generator (if an electric fan is used) after the borehole is completed. Each borehole pad area would be accessed by a 10 foot wide roadway, which depending on the location could use an existing exploration drill access road or use a newly constructed road which would be included in the proposed 4,000 linear feet of new road construction.

The multi-use trailer/container would be a small mobile unit located in the rock disposal area. The operator would comply with 43 CFR 3815.2, 3715.2-1 and 3715.5 regulations. The use or occupancy of the lands in the project area is limited to that which is reasonably incident to mining operations. Any hazardous materials (such as oil, diesel, etc.) stored on site would have secondary containment constructed to contain a spill plus 10% overage.

MINERAL EXPLORATION

As authorized by BLM, one exploration drill hole has been converted into a groundwater monitoring well per CDRMS requirements. BLM mining notice permit COC-68758 authorizes up to approximately 105 exploration drill holes. This Plan proposes to increase that number to 150 exploration drill holes. During the Plan's proposed 10 year lifespan, CDRMS NOI permit

applications for exploration drilling could be submitted at an approximate rate of 30 holes every other year. For access to these 150 holes, the Plan proposes to use up to one mile of existing previously disturbed exploration drill access roads. In the event that drill site access needs additional construction, the Plan proposes to construct up to 4,000 linear feet of new exploration drill access roads over the 10 year timeframe of this Plan's operational life. Construction procedures involve using a bulldozer to clear short spur roads suitable to provide a drill rig with access. This procedure could include removing trees, large rocks and grading drainage crossings. The Plan does not identify specifically where road construction, road enhancement or drill site locations would be located. Total surface disturbance from 4,000 linear feet of 10 foot wide exploration road is about 1 acre. Total accumulated surface disturbance of 150, 12 foot by 30 foot drill pads each with a potential 100 sq. foot mud pit, is about 1.6 acres. Maximum total estimated surface disturbance from exploration activities is about 2.7 acres. In practice, as drill sites are concurrently reclaimed, the total accrued surface disturbance would remain less than this maximum estimate.

Upon receipt of CDRMS NOI applications for exploration drilling work, BLM would conduct on-site cultural and threatened and endangered (T&E) species resource surveys to ensure compliance with both the Threatened and Endangered Species Act (ESA) and the National Historic Preservation Act (NHPA). The surveys would be documented, and NEPA analysis reviewed, by completing a Determination of NEPA Adequacy (DNA) document prior to exploration disturbance authorizations being issued.

RECLAMATION

At any time, concurrent reclamation work could be completed as areas that are no longer operational become available. Final reclamation of the project site would begin after the decision has been made to close the mine. Reclaimed areas would be graded to blend in with the existing, undisturbed topography, covered with the stockpiled topsoil or growth medium, the surface pocked to retain water and provide micro-environments, and seeded with a BLM recommended seed mix appropriate to the site's climate, elevation and topography (see Rimrock, 2012, section 7.10, Table 5 and Figure 7). Maximum grades would not exceed 3:1 (H:V).

Ore Storage and Handling Area

The ore storage pad is located on top of a rock outcrop that forms a solid base for the ore during storage and shipment. During reclamation of the site, all ore that is readily recoverable using small mobile equipment and hand tools would be consolidated and shipped to the milling facility. The rock outcrop ore storage area would then be pressure washed to remove ore fines, with the washed material being collected in the local ore stockpile sump. The settled ore fines would be cleaned from the ore pad sump until the gamma radiation emission rate in the sump area and at the ore stockpile area is consistent with the highest reading recorded on the nearby Primary Waste Pile prior to the placement of growth medium on the waste pile. All fines would be shipped to the milling facility for processing or transported underground for disposal in dry areas of the Prince Albert Mine prior to the portal closure. Any excavated material that is returned to the underground workings would be placed in a portion of the mine workings that ensure that it does not come in contact with any potential ground or meteoric water. A cap

consisting of waste rock material up to two feet thick would be pushed by bulldozer from the nearby Primary Waste Pile over the top of the ore storage area. A total of 1,000 cubic yards would be pushed an average of 250 feet to backfill the ore pad sump and cap the ore stockpile area. This waste rock material would in turn be covered by topsoil or growth medium and a vegetative cover established consistent with the remainder of the reclaimed mine site.

Rock Piles

The waste piles would be checked for proper slope configuration and all areas finish graded to a maximum slope of 3:1 (H:V) during final reclamation. The final disposition of each waste pile is listed below. The Primary Waste Pile would be used as a source of backfill material for the decline excavation.

- a. Primary Waste Pile - A medium-sized bulldozer would be used to push waste rock to bring the area up to final grade. The bulldozer would compact each lift during placement. The remainder of the waste rock at the Primary Waste Pile location would be re-contoured to meet the maximum proposed slope criteria of 3:1 (H:V).
- b. Secondary Waste Pile would be checked for proper slope configuration and all areas finish graded to a maximum slope of 3:1 (H:V).

Portal (Decline)

After the mine workings have been cleared of bats, the Prince Albert Mine portal decline and approach ramp would be backfilled with approximately 1000 cubic yards of waste material. This backfill material would be pushed by bulldozer an average distance of 150 feet from the nearby Primary Waste Pile. The waste rock material would be placed in lifts of no more than one foot in depth and compacted during placement. Final grade for the decline and ramp backfill would result in a slight increase in elevation to the ground surface over the decline location in order to prevent surface water from ponding over the backfilled opening.

Alternate Reclamation of the Portal

If an alternate closure option to establish a bat habitat is favored by the BLM and Colorado Division of Parks and Wildlife (CPW), a steel bat gate would be constructed on-site and placed on the Prince Albert Mine decline portal.

Ventilation Shafts / Boreholes

At the time of project closure and reclamation, a closure procedure for all ventilation boreholes would be submitted to the CDRMS and BLM for review and approval. A preliminary closure methodology for all boreholes is included below:

- a. Remove the fan and fan support framework.
- b. Excavate the soils from around any installed borehole casing to form a work space using a track-hoe. The workspace would be approximately 6 feet wide by 3 feet deep.

- c. Cut approximately three feet off any installed borehole casing at the excavated ground level.
- d. Install a borehole seal using expanding polyurethane foam (PUF) in accordance with the CDRMS methodology detailed in the CDRMS Abandoned Mine Reclamation Program. Alternate approved closure methods may be investigated during the final reclamation period.
- e. Backfill the excavation with excavated soils and imported clean structural fill, as necessary, to bring the surface up to grade and then compact the fill as it is placed.
- f. Grade smooth and then rip the disturbed area around the borehole location.
- g. Spread the equivalent of six inches of loose topsoil over the ripped area and drill seed in accordance with the BLM recommended seed mix.

Dismantling and Removal of Structures

All structures at the Prince Albert Mine would be portable, with wheel or skid mountings, or temporary fixtures that can be quickly and easily dismantled and removed. All of the structures at the site would be removed during reclamation. The current list of structures to be removed is identified in the Plan of Operations (Rimrock, 2012, Tables 3A (Surface Equipment/ Structures) and 3B (Underground Equipment)).

Mine Access Road

The site access road from MC Road U16 to the mine site, vent borehole(s), and all exploration and other ancillary access ways to all facilities would be reclaimed by ripping the road surface to bedrock or to a depth of 1.5 feet, where possible, and raking the soil berms running along the sides of the road across the ripped surface. The ripping would improve moisture retention to encourage deep-rooted plant growth.

Mineral Exploration Disturbance

The following general methodology is used to reclaim surface exploration drilling-related disturbance:

- a. After the test hole is completed and evaluated, the drill cuttings are placed back in the drill hole to plug the hole to a depth five feet below the ground surface; a three foot cement or expanding foam plug is placed on top of the backfilled drill cuttings to within two feet of the surface; and the top two feet of the hole is backfilled with local soil material. Any remaining cuttings would be buried or hauled to the mine waste rock pile.
- b. Any drill holes where ground water is encountered would be sealed using bentonite or cement to plug the test hole from a depth 25 feet below the zone of ground water inflow to 25 feet above the inflow zone.
- c. Any mud pit that was constructed is dewatered by evaporation, or by pumping any accumulated water into a suitable container for reuse. The pit is graded to bury any remaining accumulated drill cuttings and conform to the surrounding topography.

- d. The drill site is graded to conform to the surrounding terrain and ripped or disked for seed bed preparation, where necessary.
- e. The access road is graded and disked or ripped, where necessary, for seed bed preparation.
- f. The disturbed areas are seeded with the BLM-specified seed mix for the Club Mesa area.
- g. Reclaimed areas are monitored for vegetation growth, with appropriate weed control and reseeded as necessary.

Design Features

The Proposed Action includes the features listed below, which would be conditions of approval:

Air Quality:

1. If dust becomes visible during any phase of the operations, the operator would provide dust abatement measures to the road and mine location. These would include water or magnesium chloride, emulsified asphalt or other dust palliatives to decrease the application frequency.

Cultural Resources:

2. If subsurface cultural resources are unearthed during operations, activity in the vicinity of the cultural resource would cease and a BLM representative would be notified immediately. The following would be on the terms of the permit: "Pursuant to 43 CFR 10.4, the operator will notify the BLM, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, the operator will stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the BLM. The operator will be responsible for informing all persons associated with this project that they would be subject to prosecution for knowingly disturbing Native American Indian shrines, historic and prehistoric archaeology sites, or for collecting artifacts of any kind, including historic items and/or arrowheads and pottery fragments from Federal lands".

Soils and Vegetation:

3. Seed the topsoil stockpile with native vegetation until needed for reclamation.
4. Vehicle and pedestrian traffic would be restricted to the mine site or established roads to prevent further soil mixing and compaction outside the proposed project area.
5. Disturbance would be seeded with a BLM-approved seed mix, applied at a rate and method approved by BLM. See the BLM recommended seed mixture in the Plan of Operations (Rimrock, 2012, section 7.10). The objective is to establish a vegetative cover comprised of native species which is at least equal to that present prior to the disturbance, and a plant species composition at least as desirable as that present prior to the disturbance. Specifically, there

would be at least 8 native species present in the re-vegetated community, and species composition by cover would be made up of no less than 5% of each of the following types of plants: native perennial grasses, native perennial forbs, and shrubs. Average shrub height should be 1.5 feet or more. Should re-vegetation attempts fail, seeding would be repeated by the operator as directed by the BLM.

6. No fertilizer would be applied at the time of seeding. Fertilizer applications, based on results of a soil analysis, can be made during the second growing season or after initial seeded species establishment as directed by the BLM.

7. All disturbed areas would be re-contoured to the natural topography prior to seeding, where necessary.

Invasive, Non-native species:

8. The operator would control weeds for the life of the Plan in accordance with Montrose County weed regulations and the Colorado Noxious Weed Act.

9. The operator would submit a Pesticide Use Proposal to the BLM prior to actual noxious weed control for approval of pesticides or other control methods. An approved Pesticide application record would be given to the BLM within 48 hours of application.

10. As a safeguard to avoid the inadvertent introduction of noxious weeds, vehicle(s) and machinery that have been driven or used in weed-infested areas would be cleaned with high pressure spray equipment on site before entering non-infested areas.

11. The operator would monitor for noxious weeds and contact the BLM regarding treatment options. The plan would be submitted no later than March 1 of any calendar year to cover the proposed activities for the next growing season.

12. All soil berms, silt fences, rock and topsoil stockpiles would be kept in a weed free status. All mine access and regress routes would be kept in a weed free status.

13. Use of herbicides would comply with the applicable Federal and state laws. Herbicides would be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior.

14. Prior to the use of herbicides, the holder would obtain from the BLM written approval of the holder's plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the BLM.

Threatened, Endangered, and Sensitive Species:

15. In the future, if water depletions associated with mining activities exceed 1 acre-foot over the 10-year life of the Plan, or 32,585 gal per year evaluated in this document, BLM would be

notified so that further water depletion payments or consultation with U.S. Fish and Wildlife Service (USFWS) can be initiated. If, in the future, additional effects on species listed under the Endangered Species Act are evident, consultation with the USFWS would be reopened.

16. If the mine is to be inactive for more than one year, the portal would be closed in a manner sufficient to prevent colonization by bats.

17. Closure of the mine opening during reclamation would consist of a “permanent” closure, the design of which would be developed in cooperation with CDRMS and BLM. Temporary and “permanent” closures would be installed in such a manner so as not to entomb any stray bats that may have entered the workings, i.e. using netting that allows exit, but not re-entry during a 24 hour period.

Wetlands:

18. Drilling, drill access, and rehabilitation activities would be kept at least 25 feet away from the edge of wetland vegetation.

Water Quality, Surface and Ground:

19. Water bars would be built on existing roads to control erosion as directed by the authorizing officer:

Grade	Spacing
2%	Every 200 feet
2–4%	Every 100 feet
4–5%	Every 75 feet
5+%	Every 50 feet

20. The access roads and the mine site may require gravel if road conditions deteriorate due to mine traffic.

21. Water diversions, including settling ponds, would be removed after reclamation of the site has been completed and site has been stabilized.

Wastes/Hazardous or Solid:

22. Signs would be posted on site that identifies potential hazards associated with the mining operation including chemical hazards.

23. Material Safety Data Sheets for any chemicals would be maintained on-site.

24. Sanitary facilities would be provided on location.

25. Any fuel spills would be immediately reported to the BLM, and copies of all characterization and remediation spill data and reports would be filed within two days with the BLM. Spill reporting, containment and cleanup would occur immediately and would be removed to the nearest approved landfill.

26. All trash and domestic solid waste would be collected from the mine location and the surrounding area and removed to an approved sanitary landfill.

Health and Safety:

27. Signs would be posted on the proposed project facilities that identify potential hazards associated with their operation including noise and explosive use.

28. Fire restrictions/ guidelines during periods of high wildfire danger would be followed as required by the BLM.

29. A monitoring and sampling plan would be submitted and approved to determine baseline radiation levels in the Plan area and in any future modification area prior to, during mining and at reclamation. The monitoring plan would include a description of monitoring devices, sampling parameters and frequency, reporting procedures and methods. The monitoring plan would be coordinated with and approved by the BLM prior to surface disturbance. If monitoring results indicate there are hazard levels of radioactivity on the mine site due to mining activity, actions would be taken to prevent damage to public health, welfare and the environment. If the mine is to be idle for more than one year, the mine entrance would be closed using a method sufficient to preclude entry by the public. Temporary closure methods would be approved by BLM and CDRMS. During final reclamation, the decline opening would be permanently closed using methods approved by BLM and CDRMS.

Access and Transportation:

30. The operator would cease activity, including haul trucks, when the soil and roads became excessively wet in order to prevent damage to the vegetation, soil, and roads.

Noise:

31. If noise exceeds Colorado noise emission limits (Colorado Regulation 25–12 Article 12, “Noise Abatement”) with any mining operations, adequate muffling techniques, such as hospital-type mufflers, would be applied to reduce noise levels to an acceptable level.

Visual Resources:

32. Except as required to meet the minimum safety and security requirements (e.g., collision markers required by the FAA, or other emergency lighting triggered by alarms), all permanent

lighting should use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the light source), and must meet the Illuminating Engineering Society (IES) glare requirement limiting intensity of light from the luminaire in the region between 80° and 90° from the ground. All fixtures must be mounted properly, at the proper angle. During times when lighting is not necessary, lights are to be turned off.

33. Paint all long-term facility structures a color that enables the facilities to blend with the natural background color of the landscape as from a viewing distance and location typically used by the public. The selected color should be one or two shades darker than the dominant background color.

Paleontology:

34. If paleontological materials (fossils) are uncovered during project activities, the operator would immediately stop activities that might further disturb such materials, and contact the BLM. The operator and the BLM would consult and determine the best option for avoiding or mitigating paleontological site damage.

No Action Alternative:

The no action alternative, would deny the proposed mine Plan of Operations. This alternative would deny authorizing the actions and activities that this specific Plan proposes; another plan could be submitted later for BLM to consider.

The existing mining activity would continue as authorized under the COC-68758 mining notice permit, which allows up to 4.7 acres for mining and exploration (see the Existing Mine Plan Map below, and Appendix A Photo 2). Since Rimrock has reached the 999 ton ore limit, shipping of ore for testing would not continue.

Mine facilities, disturbances and activities currently included in the authorized 3809 mining notice would continue and would consist of the following:

- a. The access road to the mine site from MC Road U16.
- b. One 12 to 15 foot high ore stockpile and a 15 foot high waste rock stockpile.
- c. One mine portal opening and decline tunnel of approximately 550 feet in length.
- d. One salvaged growth medium stockpile.
- e. Structures and equipment include a 20-foot tool storage container; three explosives magazines; a skid steer loader; two underground haul trucks; a small air compressor; diesel- powered ventilation fan; two or more pneumatic drills; and a crew truck.
- f. Drilling of up to 105 exploration drill holes.

SCOPING, PUBLIC INVOLVEMENT and ISSUES

A Scoping Notice was sent to 36 parties. Five comment letters were received; four from conservation organizations and one from a county government. The issues included concerns for wildlife, special status species, waste rock and ore storage, water quality, transportation and roads, landscape health, recreation, ground disturbance and reclamation, air quality, public safety, and other related issues. There was also a comment that analysis should be limited to the local area, considering the size and purpose of the action.

A public comment period was provided for the preliminary EA. Six comments were received from INFORM during the 30-day public comment period (see Appendix E and F).

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: San Juan/San Miguel Resource Management Plan

Date Approved: September 1985

Decision Number/Page: Page 17

Decision Language: All public land is open to mineral entry and development unless previously withdrawn (i.e. wilderness, administrative withdrawals, etc.). Mineral exploration and development on public land would be regulated under 43 CFR 3800 to prevent unnecessary and undue degradation of the land.

Other applicable authorities include the Mining Law of 1872, the Federal Land Policy Management Act of 1976, and 43 CFR 3800.

Standards for Public Land Health: In January 1997, Colorado BLM approved the Standards for Public Land Health. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. A finding for each standard will be made in the environmental analysis (next section).

Standard	Definition/Statement
#1 Upland Soils	Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.
#2 Riparian Systems	Riparian systems associated with both running and standing water, function properly and have the ability to recover from major surface disturbances such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.
#3 Plant and Animal Communities	Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes.

#4 Threatened and Endangered Species	Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.
#5 Water Quality	The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

AFFECTED ENVIRONMENT and ENVIRONMENTAL CONSEQUENCES / MITIGATION

This chapter provides a description of the human and environmental resources that could be affected by the Proposed Action and presents comparative analyses of the direct, indirect and cumulative effects on the affected environment stemming from the implementation of the Proposed Action. , including elements specified by statute, regulation, executive order, or the Standards for Public Land Health,

Potential effects to the resources/concerns in the table (below) were evaluated to determine if detailed analysis is necessary. Consideration of some elements is to ensure compliance with laws, statutes, regulation or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, the Standards for Public Land Health, or to the BLM Uncompahgre Field Office (UFO) in particular.

Cumulative impacts of the Proposed Action are shown in the analysis of each element. Past, present and reasonably foreseeable actions known to the BLM that may occur within the affected area are shown at the end of this section.

Elements	Not Applicable or Not Present	Present, But No Impact	Applicable & Present; Brought Forward for Analysis
Air Quality			X
ACEC	X		
Wilderness	X		
Lands with Wilderness Characteristics	X		
Wild and Scenic Rivers	X		
Cultural			X
Native American Religious Concerns			X
Farmlands, Prime/Unique	X		
Soils			X
Vegetation			X
Invasive, Non-native Species			X
Threatened and			X

Endangered Species			
Migratory Birds			X
Wildlife, Terrestrial			X
Wildlife, Aquatic			X
Wetlands & Riparian Zones		X	
Floodplains	X		
Water -- Surface			X
Water -- Ground			X
Wastes, Hazardous or Solid			X
Environmental Justice		X	
Socio-Economics			X
Access and Transportation			X
Realty Authorizations	X		
Range Management		X	
Forest Management		X	
Fire			X
Noise			X
Recreation			X
Visual Resources			X
Geology and Minerals			X
Paleontology		X	

AREAS OF CRITICAL ENVIRONMENTAL CONCERN; WILDERNESS; LANDS WITH WILDERNESS CHARACTERISTICS; WILD AND SCENIC RIVERS; FARMLANDS, PRIME OR UNIQUE; REALTY AUTHORIZATIONS

These resources or resource uses would not be impacted, and will not be analyzed further. Reasons they are not impacted follow:

There are not any Areas of Critical Environmental Concern (ACEC) within or near the project area.

Designated wilderness or Wilderness Study Areas do not exist within or adjacent to the project area. The nearest designated wilderness areas are the Gunnison Gorge Wilderness and the Black Canyon Wilderness – each approximately 50 miles distant to the east. The Tabeguache Area (a federally designated area managed consistent with the Wilderness Act of 1964 for the protection of its wilderness character) lies approximately 11 miles to the east of the project area at its closest point. The Dolores River WSA is about 7 miles southwest. Within the constraints of the design criteria in the Proposed Action, there would be no effects to the character of designated wilderness, WSAs or the Tabeguache Area.

The inventory for wilderness characteristics in the project area was updated in 2011. No lands within or adjacent to the project area were found to possess wilderness characteristics. The report “Inventory of Uncompahgre Planning Area Lands with Wilderness Characteristics: 2011 Update” is available here:
www.blm.gov/co/st/en/fo/ufo/uncompahgre_rmp/lwc_inventory.html

The project area is one-half mile east of the Dolores River and 0.65 south of the San Miguel River at the closest points. Both rivers have been determined to be eligible for inclusion in the National Wild and Scenic River System. None of the project area is within or adjacent to the ½ mile wide river study corridor (1/4 mile on each side of an eligible segment). There would be no effect on the eligibility, preliminary classifications, or outstandingly remarkable values of either river.

There are not any prime or unique farmlands within or near the project area.

There are not any rights or way or other realty authorization within or impacted by the project area.

AIR QUALITY

Affected Environment: The nearest Mandatory Class 1 Federal Airsheds are Arches National Park (more than 40 miles northwest), Black Canyon of the Gunnison Wilderness (more than 50 miles east northeast), and Canyonlands National Park (more than 50 miles west). Other notable airsheds in the area include the Tabeguache Special Area (10 miles east), Dolores River Canyon WSA (approximately 7 miles southwest), and the Sewemup WSA (approximately 7 miles northwest). Major drainages adjacent to the mine site are the San Miguel and Dolores Rivers. Nearby roadways include CO State Highways 90 and 141. Nearby communities include Bedrock and Paradox, each within 10 miles.

Winds in the area are dominated by the effects of the drainages of the San Miguel River Canyon and the Dolores River Canyon. Winds generally have a westerly component during the day and are generally easterly during the night. Air quality in this area complies with federal air quality standards according to the most recent Colorado Air Quality Control Commission’s Report to the Public (CDPHE 2012). The mine site is within the Western Slope Region for air quality planning. Air quality concerns in this area are primarily from motor vehicles, oil and gas development, Nucla coal-fired power plant, coal mines, sand and gravel operations, windblown dust, wildfires, and prescribed fires. The National Ambient Air Quality Standards (NAAQS) are overseen by the State of Colorado.

Environmental Consequences:

Proposed Action – A moderate amount of particulate matter (dust) would rise into the air when vegetation is removed. Blowing and fugitive dust from vehicles would be noticed on disturbed surfaces such as the mine site and access roads. Air quality would be lowered by exhaust emissions from vehicles and dust from the rock stockpiles. Air emissions would include carbon monoxide and nitrogen oxides from vehicle exhaust, and radon from the waste rock and

ore stockpiles as well as ventilation exhaust fans. Radon levels would increase to above-normal ambient levels in the immediate vicinity of stockpiles, but will dissipate quickly aboveground.

The most intense disturbance would be of short duration during clearing of the rock and ore stockpiles and the mine development activities. Dust from loading ore and waste rock would contribute to emissions short term for the duration of the event. Dust resulting from mining operations would represent an incremental increase in particulate matter that is described as low and long term. To reduce fugitive dust on disturbed areas, seed would be applied to stabilize soils. To reduce the impacts of dust created from vehicles traveling to and from mine, dust abatement measures, such as application of water or magnesium chloride, emulsified asphalt or other dust palliative, would be taken.

Mitigation – Prior to beginning any construction, an air pollution emission notice (APEN), issued by the Colorado Air Quality Control Division, that details the measures taken to control fugitive dust emissions during mining operations on the surface, will be required.

Cumulative Impacts – Impacts to air quality associated with travel activities would generally add incrementally for short periods of time with no measurable cumulative impacts beyond localized area. Any cumulative impacts to air quality would generally add incrementally for only short periods of time (<5 hours) with no measurable cumulative impacts beyond localized area. The short term impacts would add cumulatively to dust generated by recreational activity and other travel on dirt routes near the project area. Degradation associated with construction of facilities would terminate upon completion of the facilities.

No Action Alternative – Types of impacts would be similar to the proposed action but to a lesser degree. Exploration, mine development, and travel on roads would continue under the mining notice. Up to 105 exploration holes are authorized, as well as an additional 2.2 acres of surface disturbance.

CULTURAL RESOURCES

Affected Environment: The Prince Albert Mine is situated on an upland bench typical of the Colorado Plateau canyon country, with broad flat mesa tops encompassed by steeply dissected canyons. Within this eco-zone, cultural sites are typically associated with low canyons and water sources with substantial occupations seldom occurring on the mesa tops. In the Uravan area, known cultural sites are mainly comprised of historic mining locations associated with the Uravan Mineral Belt. The area has been disturbed by previous mining operations. In the vicinity of the Proposed Action, there are waste dump piles, trash piles, an incline shaft portal, exploration drill holes, naturally reclaimed drill roads and a vent shaft.

Environmental Consequences:

Proposed Action – As currently outlined, there will be no effect on cultural resources from this authorization. The Prince Albert Mine itself is a known cultural site, but has been inventoried and evaluated as ineligible for nomination to the National Register of Historic

Places. Class I and Class III cultural resource inventories of the mine site have been conducted in January 2006 and again in April 2013 with negative results.

A cultural resource inventory has not been completed for exploration activity or extension of activity outside the existing surveyed area.

Mitigation – Exploration activity or extension of activity outside the existing surveyed area requires additional survey of the proposed activity before the activity begins. In addition, if the mining plan is modified in such a way that unknown historic properties are impacted, an appropriate mitigation plan would be implemented in consultation with the Colorado State Historic Preservation Office (SHPO).

Cumulative Impacts – None.

No Action Alternative – There would be no impacts to cultural resources.

NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment: No Native American religious concerns have been identified in the project area.

Environmental Consequences:

Proposed Action – No known sacred sites or traditional cultural properties would be affected by the project.

Mitigation – If future inventories and/or consultations reveal the presence of Native American concerns, appropriate mitigation would be implemented in consultation with Colorado SHPO and the appropriate tribal entities.

Cumulative Impacts – There are none known or anticipated.

No Action Alternative – There would be no known impacts to Native American religious concerns.

SOILS (includes a finding on Standard 1)

Affected Environment: The soils within the project area are largely a product of the local geologic parent material, climatic conditions, and the topographic position on the landscape. Sedimentary sandstone and shale formations occupy much of the surface geology of the area. The inter-bedded sandstone and shale units of the Dakota and Morrison formations, which dominate the surface over much of the area, weather to produce sandy and fine sandy loam textured soils. The specific soils and some of their characteristics can be seen in the table below. The soils described in the table below are from the San Miguel Soil Survey (USDA, Natural Resources Conservation Service).

Soil Unit Name	Geomorphic Description	Texture	Erosion Hazard for Roads and Trails	Soil Erodibility (Kw) Higher=More Erodable (0.2-.69)	Acres
Barx-Progreso complex, 3 to 12 percent slopes	mesas, terraces	fine sandy loam	Moderate	0.24	14.6
Bodot, dry-Ustic Torriorthents complex, 5 to 50 percent slopes	landslides, structural benches, terraces	cobbly clay loam	Severe	0.15	208.2
Gladel-Bond-Rock outcrop complex, 1 to 50 percent slopes	escarpments, mesas, structural benches	sandy loam	Severe	0.24	6.1
Rock outcrop	canyons, mesas	unweathered bedrock	Severe	0	0.2

The primary soil type in the project area is the Bodot complex. Slopes range from 5 to 50 percent. This component is on terraces, structural benches and landslides. The parent material consists of residuum weathered from shale and depth to a root restrictive layer or bedrock is 20 to 40 inches. The natural drainage class is well drained (Hydrologic Soil Group C). Water movement in the most restrictive layer is moderately low. Shrink-swell potential is high due to the clay content. Organic matter content in the surface horizon is about 1 percent and the soil has a slightly saline horizon within 30 inches of the soil surface.

The other primary soil type covering approximately 15 acres is the Barx complex. Slopes are 3 to 12 percent on mesas and terraces. The parent material consists of alluvium derived from sandstone and depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained (Hydrologic Soil Group B). Shrink-swell potential is low and organic matter content in the surface horizon is about 2 percent.

The vegetation cover in most of the project area is Piñon-Juniper woodland with a sagebrush/grass understory. Biological soil crusts are also present and serve an important role in helping to stabilize the soil and inhibit wind and water erosion. Biological soil crusts are a complex mosaic of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria. The crusts also serve a critical role in nutrient cycling, water infiltration, and seedling germination (USDI 2001). Fairly high levels of crust development exist in the project area.

Environmental Consequences:

Proposed Action – Some of the expected direct impacts within the project area include:

- Removal of vegetation, exposing the soil to wind and water erosion.
- Increased sediment transport, through erosion processes such as sheet, gully, rill erosion, and mass movement.
- Mixing of soil horizons during removal and storage.
- Development of roads on slopes requiring cut and fill.
- Compaction from heavy truck traffic and stockpiling of waste rock and ore.

- Soil contamination from vehicle fuels, coolants, lubricants and ore handling areas.
- Loss of soil productivity.

Exploration and mining would have a direct, physical impact to soils. Approximately 8.3 acres of soil would be disturbed over the course of 10 years in the construction of the proposed mine and the associated waste rock piles, ore stockpile, and water detention facilities.

In the larger project area, approximately 2.7 acres of soil would be disturbed in the exploration area by road building, clearing of drill pads, and drilling of up to 150 exploration holes. A typical drill pad would be 12 feet by 30 feet and would include a 100 sq. foot mud pit. Drill pads would be accessed by existing roads and by approximately 4000 feet of new 10 foot wide roads.

Features from the proposed action for the mine area are required by the State of Colorado permitting process, and would help maintain soil on site, reducing wind or water erosion. These include a storm water management plan; seeding the topsoil stockpile with native vegetation; contour waste rock piles at a slope of 3:1 (H:V); the four down gradient detention ponds will hold a 10 year 24 hour event; use water bars and berms to divert stormwater away from the ore storage pad, site roadways, and onsite facilities and into bypass diversion channels or detention basins; reclamation of disturbed areas as an ongoing practice during mining activities.

Exploration roads will be re-contoured and ripped prior to seeding with native seed. Additional mitigation measures are added (below) for the exploration activities in the project area.

None of the soils described in the existing environment exhibit characteristics that would likely prohibit the mitigation below from minimizing the impacts from the mining and exploration activities. Some loss of soil productivity after reclamation would be expected until native vegetation is established and weed treatments are conducted.

Mitigation – The following mitigation would further help maintain soil on site, reducing water erosion.

- Water bars and settling ponds will be built on existing exploration roads as well as new roads.
- Drainage crossings should be hardened with riprap or rock material rather than soil to prevent sediment mobilization during storm events.

Cumulative Impacts – This mine, when combined with the past, present and reasonably foreseeable actions, could add to impacts from other activities on private and federal lands in the watershed, could contribute to decreased soil health. Other activities causing, or that could cause, impacts to soils on BLM and Forest Service lands in the watershed include extensive historical uranium mining, potential mines in the DOE ULP area, mill operations and a superfund disposal facility, livestock grazing, rights-of-way, recreation and travel infrastructure. The types of impacts expected from other actions in the watershed would be similar to those described for the Proposed Action.

No Action Alternative – The mine area and exploration area would impact an area of 4.7 acres. The direct and indirect effects of the no action alternative on soils would be similar to those described under the Proposed Action, but would not have the design features or mitigation.

Finding on the Public Land Health Standard for upland soils: During 2009 and 2010, a Land Health Assessment (LHA) was conducted near the mine area (BLM, 2011). Soil health was assessed using the following indicators: evidence of excessive rills and pedestals, active gullies, appropriate groundcover and plant canopy cover (including Biological Soil Crust), adequate plant litter accumulation, minimal litter movement, appropriate soil organic material, and plant species diversity and presence of vigorous, desirable plants. Much of the project area's soils were rated as meeting the soil standard but with problems, meaning at least two of the above soil surface indicators were not adequate for the site. The specific rating for the mine area indicated pedestals and invasive species were present. More detailed information can be found in the East Paradox Land Health Assessment (BLM, 2011). Development of the project area would increase surface disturbance, increasing the potential for deterioration of soil and vegetative health. Standard 1 would continue to be identified as met until further assessed.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The vegetation on the site consists of a medium density Piñon-juniper (*Pinus edulis* and *Juniperus osteosperma*) community which surrounds several openings classified as grass-forb rangeland with abundant prickly pear cactus. More detailed descriptions of these two vegetation types can be found in Appendix E of the East Paradox Land Health Assessment (BLM 2011). Cryptobiotic crusts are present in the area, particularly in the relatively undisturbed areas within the Piñon-juniper community. There are few vegetation concerns in the area, and vegetation appears to be in good condition.

Environmental Consequences:

Proposed Action – Approximately 11 acres of vegetation and cryptobiotic crusts could be directly disturbed in conjunction with the development of the mine site and exploration work. This disturbance would involve removal or damage of the existing vegetation. In addition, indirect impacts to vegetation adjacent to these 11 acres are likely in the form of increased susceptibility to weed invasion, and diminished plant vigor, especially associated with dust depositing on plants. These indirect impacts are most likely to occur within a 25 foot zone next to mine workings, roads, drill sites and drill access routes. Additional indirect impacts to native plant populations are possible when reclamation introduces different genotypes into the local plant populations. Impacts from vegetation removal would be reduced in acreage over the short term by temporary re-vegetation of topsoil piles, by reclamation and re-vegetation of drill sites and drill access routes.

Over the long term, reclamation and re-vegetation is expected to replace the native vegetation lost during the Proposed Action. Required weed control measures would reduce the indirect impacts associated with disturbance. The BLM specified seed mix would reduce but not eliminate the impacts associated with using native seed from non-local populations. Although the Proposed Action covers a 10 year period, it is likely that re-vegetation would not meet

performance criteria for up to 20 years due to the semi-arid climate and skeletal soils. Cryptobiotic crusts eliminated during mining activities would not reestablish on this site for many decades.

Design features of the proposed action would reduce impacts to vegetation. These include several noxious weed control measures; seeding of the disturbed sites during reclamation with a BLM approved seed mix, applied at a rate and method approved by BLM; not allowing fertilizer to be applied at the time of seeding; and establishing a Re-vegetation Performance Criteria.

Mitigation – No additional mitigation is needed.

Cumulative Impacts – The alternative, when combined with past, present and reasonably foreseeable actions, would have very minor negative short term impacts to vegetation at the watershed level. Removal or damage of 11 acres of native vegetation, when combined with other vegetation impacts in the region contributes to the ongoing, incremental vegetation degradation at a watershed or regional level. Vegetation at the watershed scale is experiencing a variety of impacts on federal lands such as those associated with wildfire, vegetation treatments, livestock grazing, wildlife use, mining and the extensive network of historic mines, mine reclamation, rights-of-way, recreation, travel infrastructure, and potentially from mining in the DOE ULP area. Impacts to vegetation resulting from activities on private property in the watershed include cultivation, irrigation, livestock production, residential and commercial land development, and mining. The scale and scope of these other impacts reduces the degree to which vegetation changes resulting from the Proposed Action would affect overall vegetation health in the watershed, particularly over the long term.

No Action Alternative – There will be no additional impacts to vegetation.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic; Wildlife, Terrestrial; and Invasive, Non-native Species): There would be no impact to this standard. Because of the acreage involved, extensive mine development and exploration could degrade vegetation within the land health polygon to a lower classification—Meeting Standard 3 with problems, particularly over the short term. However, with the identified mitigation, over the long term, the Proposed Action is consistent with returning vegetation condition to its current rating—Meeting Standard 3 for vegetation.

INVASIVE, NON-NATIVE SPECIES (includes a finding on Standard 3)

Affected Environment: Known noxious weeds in the area include hoary cress (*Cadaria draba*), Russian knapweed (*Acroptilon repens*), and downy brome (*Bromus tectorum*).

Environmental Consequences:

Proposed Action – Approximately 11 acres of vegetation could be directly disturbed with the development of the mine site and exploration work. This disturbance would involve removal or damage of the existing vegetation which increases the likelihood of noxious weed introduction and invasion both directly on site and indirectly to adjacent rangeland. In addition,

trucks would be hauling material to Blanding, Utah which would increase the opportunity for new noxious weed to be introduced into the environment. Weeds that would be considered Early Detection Rapid Response weeds from the San Juan County, Utah area that could be inadvertently introduced into the area include Dyers woad (*Isatis tinctoria*), Diffuse knapweed (*Centaurea diffusa*), Medusahead (*taeniatherum caput-medusa*), Spotted knapweed (*Centaurea maculosa*), Squarrose knapweed (*Centaurea squarrosa*), Yellow starthistle (*Centaurea solstitialis*), and Jointed goatgrass (*Aegilops cylindrical*).

The mine would be required to control noxious weeds clean vehicles to remove weed seed and maintain disturbances in a weed free status.

Mitigation – The following mitigation would further help reduce impacts from noxious weeds.

- A noxious weed treatment plan is required from the operator with yearly reports provided to the BLM. In this plan, noxious weed control would be addressed on the mine site and access roads used by the operator for the life of the Plan in accordance with the Colorado Noxious Weed Act and Montrose County weed requirements.

Cumulative Impacts – The alternative, when combined with past, present and reasonably foreseeable actions, could have a minor long term impact for noxious weed introduction and spread at the watershed level. Noxious weed introduction and spread resulting from the Proposed Action is initially small in size and with appropriate mitigation measures in place should not have major long term negative impacts in the watershed.

No Action Alternative – There would be no additional impacts from weed invasion and spread.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic; Wildlife, Terrestrial; and Vegetation): There is the potential to introduce new noxious weeds into the watershed from San Juan County, Utah. However, with these identified as Early Detection Rapid Response and a noxious weed plan identifying mitigation measure to guard against introduction and spread of noxious weeds, the Proposed Action should maintain land health objectives for the watershed over the long term.

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

Affected Environment: The UFO utilizes the USFWS Information, Planning, and Conservation System (IPaC) to generate the most current species list to analyze the effects of a Proposed Action on threatened, endangered and candidate species and designated critical habitat for these species (Consultation Tracking Number 06E24100-2013-SLI-0104). In accordance with BLM Manual 6840, the goal of management is to prevent a trend toward federal listing or loss of viability for sensitive species.

Appendix B lists potentially occurring federally listed species within the UFO and provides assessments for their occurrence within the project area. No threatened, endangered, or federally

protected species or habitats occur within the project area. Big river fish (Colorado pikeminnow, razorback sucker, bonytail chub, and humpback chub) occur downstream of the project area. Only those species where the project is within the known range of the species and with potential habitat or known occurrences are discussed below.

Appendix C identifies species of special management concern that are known or have potential to occur within the UFO along with occurrence assessments for the area. Several sensitive species are known or have the potential to occur in the project area. Only those species where the project is within the known range of the species and with potential habitat or known occurrences are discussed below.

Federally Listed Fish, BLM Sensitive Fish & Amphibians

The Colorado pikeminnow, razorback sucker, bonytail chub, and humpback chub occur downstream near the mouth of the Dolores River and in the Colorado River. There are no known occurrences of these species in the upper Dolores River or its tributaries. There is not suitable habitat for these species in the project area. Designated Critical Habitat for these species is located downstream in the Colorado River. BLM sensitive fish and amphibian species may be found downstream in the Dolores River, but there is no habitat within the project area. The project area has limited habitat for northern leopard frog and canyon tree frog in the form of ephemeral ponds and drainages. No wetlands or riparian zones occur in the project area. There are known locations of Northern leopard frog in the San Miguel River to the north of the project area. There are no known locations of canyon treefrog in the vicinity of the project area, but they are known within the Dolores River.

BLM Sensitive Birds

The project area contains suitable habitat for peregrine falcon, northern goshawk, and Brewer's sparrow. There are no known nests sites for any of these species. Peregrine falcon could be nesting on adjacent cliffs or foraging throughout the project area. Known peregrine falcon eyrie locations are along the Dolores and San Miguel Rivers within approximately 1 mile of the project area. Northern goshawk may use the project area for wintering habitat. Brewer's sparrow may use sagebrush and grassland areas for nesting habitat. They are known to utilize the general area (CNHP¹)

BLM Sensitive Mammals

Allen's big-eared bat, big free-tailed bat, spotted bat, Townsend's big-eared bat, and fringed myotis all have the potential to have roost habitat in the area. Townsend's big-eared bats are known to have roosts in the general area.

A small herd of desert bighorn sheep, estimated at approximately 45, inhabits the Dolores River Canyon on the west side of the area. The Dolores River Canyon and surrounding area is historic habitat. This herd was transplanted into the area under cooperative agreement with the CPW. Releases were made in 1986 (35 sheep), 1987 (20 sheep), 1989 (20 sheep), 1990 (19 sheep), 2001 (25 sheep), and 2010 (15 sheep). Desert bighorn sheep could utilize the project area, but Colorado Parks and Wildlife mapped habitat only includes winter range outside and to the west of the project area.

¹ CNHP. 2011. Colorado Natural Heritage Program Geographic Information Systems data set for 2011.

BLM Sensitive Plants

Naturita milkvetch, San Rafael milkvetch, sandstone milkvetch and Paradox breadroot are all plant species that specialize in niche habitats and are expected within the general area. Naturita milkvetch are associated with cracks and ledges of sandstone cliffs and flat bedrock areas typically with shallow soils within Piñon-juniper woodland in elevation range of 4800-6700 feet. San Rafael milkvetch are associated with banks of sandy clay gulches and hills, at the foot of sandstone outcrops, or among boulders along dry watercourses in seleniferous soils derived from shale or sandstone formations in elevation range of 4500-5300 feet. Sandstone milkvetch are associated with sandstone rock ledges, domed slickrock fissures, talus under cliffs, sometimes in sandy washes in elevation range of 6000-5500 feet. Paradox breadroot is associated with Piñon-juniper woodlands in sandy soils or adobe hills in elevation range of 4800-5700 feet.

Environmental Consequences:

Proposed Action –

Federally Listed Fish, BLM Sensitive Fish & Amphibians

Activities associated with mine expansion and exploration will not have direct impacts to Colorado pikeminnow, razorback sucker, bonytail chub, and humpback chub in that habitat for these species is not located within the project area. See Water Quality section for effects to Lower Dolores River. These effects could have downstream effects to water and fish habitat quality, but given distance to occupied habitat for these species, may be undetectable.

Water use associated with this proposal (0.074 acre-feet per year) could result in an impact to Endangered Colorado River fish. The USFWS determined in 1988 that any federal project that results in depletion of water from the Colorado River Basin would automatically be deemed likely to jeopardize the continued existence of the Colorado pikeminnow (formerly Colorado squawfish), humpback chub, bonytail chub, and razorback sucker and result in the destruction or adverse modification of their critical habitat. On February 25, 2009, BLM was issued a programmatic Biological Opinion (ES/GJ-6-CO-08-F-0010) on water depletions associated with BLM projects (excluding fluid mineral development) authorized by BLM within the Upper Colorado River Basin in Colorado. Utilizing this Biological Opinion, BLM would report the depletion to the USFWS and pay the fee for the depletion, thus meeting the requirements of the ESA. No consultation with the USFWS would be required. It is estimated that over the 10-year plan time frame, 0.74 acre-feet of water would be used. For purposes of estimation, this will be rounded up to 1.0 acre-foot of water for the 10-year life of the project. In the future, if accumulated water depletions associated with mining activities over 10-year life of project exceed a total of 1 acre-foot (or 32,585 gal per year), BLM would be notified so that further water depletion payments, or consultation with USFWS can be initiated.

If in the future, additional effects on species listed under the ESA are evident, consultation with the USFWS could be reopened.

Similar to federally listed fish above, activities associated with mine expansion and exploration will not have direct impacts to BLM sensitive roundtail chub, bluehead sucker, flannelmouth sucker, or Colorado River cutthroat trout in that habitat for these species are not located within

the project area. Similar to federally listed fish, there could be downstream effects to water and fish habitat quality, but given distance to occupied habitat for these species, may be undetectable.

With habitat for amphibians being very limited within the project area, activities associated with mine expansion and exploration could have impacts to individuals, if present, but would not likely result in effects at the population level.

BLM Sensitive Birds

Exploration and mining activities would have indirect impacts to peregrine falcon by removal of vegetation that could be habitat for prey species. Additionally, disruptive activities associated with human presence and active machinery would cause animals (peregrine falcon or prey) to be displaced from the area around the activity. The mine expansion proposes surface disturbance up to 8.3 acres, while exploration activities propose surface disturbance up to 2.7 acres. Mine expansion surface disturbance is more centralized, but would have an area of disruption for peregrine falcons that would include an approx. 0.5 mile buffer around the area. Mine exploration surface disturbance is much more dispersed across the area, and each exploration hole would also have approx. 0.5 mile buffer around the area that could be considered as an area of disruptive activities. These activities may have impacts to the one known peregrine falcon territory adjacent to the project area or other unknown eyries in the area. Through time, local peregrines may select their eyrie and foraging areas away from mining and exploration activities. Impacts from both exploration and mining could have impacts to individuals, but would not likely result in effects at the population level.

Exploration and mining activities would also have similar indirect impacts to northern goshawk foraging habitat in the area as described above for peregrine falcon, however since northern goshawk most probably only use the area for foraging, their impacts would be smaller in scale, and they would most probably displace their foraging activities to other habitats.

Exploration and mining activities may have direct and indirect impacts to Brewer's sparrow. Depending on timing of activities, removal of vegetation (sagebrush and grass) could cause direct impacts to Brewer's sparrow nest sites. Removal of vegetation for mine expansion will remove suitable habitat for both nesting and foraging. Additionally, as described above for peregrine falcon, indirect impacts could occur for Brewer's sparrow through disruptive activities. Impacts from both exploration and mining could have impacts to individual Brewer's sparrows, but would not likely result in effect at the population level.

BLM Sensitive Mammals

Exploration activities should have no impact to BLM sensitive bat species. For mine expansion and mining activities, during extended periods of mine inactivity, bats could begin to utilize the mine, and then be displaced when mine activity resumed. Once the mine reaches reclamation stage, reclamation includes two options for the portal (decline): backfill or gate the portal. Even with efforts to clear the mine workings of bats, some bats could be entombed during backfill operations. Gating the portal may provide new roosting habitat for these species. Neither the presence of a bat gate, nor extended periods of mining inactivity could insure that the mine would ever be actively utilized by bats.

Bighorn use occurs mostly in the Dolores River Canyon, while some use also occurs on the adjacent mesa tops. Predation by mountain lion appears to be one of the primary limiting factors on the population. Desert bighorn sheep are unlikely to use the project area. Once mining activities begin, they would likely avoid the area. No impacts are expected to desert bighorn sheep.

BLM Sensitive Plants

While there are no known occurrences, Naturita milkvetch, San Rafael milkvetch, sandstone milkvetch and Paradox breadroot are all possible within the project area. Exploration and mine expansion activities could have direct impact to these species through direct take of individuals or impacts from dust on photosynthesis and reproduction associated with soil disturbing activities. These activities may affect individuals of a species, but is not likely to result in effects to populations.

Mitigation – It is recommended that botanical surveys be conducted for Naturita milkvetch, San Rafael milkvetch, sandstone milkvetch and Paradox breadroot within the affected areas during the blooming period. If individuals or populations are located, report locations to BLM. It is recommended that surface disturbing activities not occur within 300 feet of those locations.

Cumulative Impacts –Also see Water Quality, Vegetation, Migratory Birds, Terrestrial and Aquatic Wildlife Section. Although relatively few acres, the mining activity would cumulatively add to other impacts in the watershed on federal lands due to the increased surface disturbance and potential for leaks or spills in the watershed. Additional impacts on BLM and Forest Service lands in the watershed include historical, present and potential future uranium mining, a superfund mill site, grazing, rights of ways, recreation and travel infrastructure. The types of impacts expected from all of the cumulative actions in the watershed would be similar to those described for the Proposed Action.

No Action Alternative – The mine area and exploration area would impact an area of 4.7 acres. The direct and indirect effects of the no action alternative on Special Status Species would be similar to those described under the Proposed Action.

Finding on the Public Land Health Standard for Threatened & Endangered species: A complete Land Health Assessment was conducted in 2009-2010 in the East Paradox area (BLM, 2011). The nearest streams or river assessed for Land Health Standard 5 (Water Quality) was the San Miguel and Dolores Rivers. Both were found to be “meeting” Standard 5. Additionally, the project area was found to be primarily meeting for Standard 3 (Native Communities) and 4 (Special Status Species). One area was meeting with problems for Standard 3 for grass and forb cover and exotic weeds due to historic settlement and historic grazing. With mitigation as proposed, this project should not cause changes to meeting Land Health Standards for T&E species.

MIGRATORY BIRDS

Affected Environment: The project area provides habitat for migratory bird species that typically use Piñon–juniper/shrub/grass communities. The priority species considered during this analysis are those found in the USFWS’s Birds of Conservation Concern (USFWS 2002). Evaluations are based on data found in the Colorado Breeding Bird Atlas (Kingery 1998), and the species shown below are those known to breed in the area and for which there is suitable habitat.

Appendix D identifies migratory bird species of special management concern that are known or have potential to occur within the UFO along with occurrence assessments for the area. Several migratory bird species are known or have the potential to occur in the project area. Only those species where the project is within the known range of the species and with potential habitat or known occurrences are discussed below.

Bald Eagle (*Haliaeetus leucocephalus*)—Utilize a wide range of habitats to hunt, roost and raise young. Bald eagles are most abundant during winter months along riparian corridors. The project area may be used as winter foraging habitat, but no other crucial habitats have been mapped by CPW, National Diversity Information Source (NDIS) within the project area.

Golden Eagle (*Aquila chrysaetos*)—Utilize a wide range of habitats to hunt, roost and raise young. Suitable mixes of sagebrush and cliffs, and vast expanses of open range with high populations of rabbits can support large populations (Kingery 1998). Habitat suitable for nesting occurs in the nearby Paradox Valley or Dolores River Canyon. Four golden eagle nest sites are mapped by NDIS within a 0.25 and 0.75–mile buffer around the project area.

Peregrine Falcon (*Falco peregrinus*) —See the Special Status Species section.

Prairie Falcon— (*Falco mexicanus*) —Occupied nests for this species are located within the nearby Paradox Valley and Dolores River Canyon. Occasional foraging could take place around the project area. No known nesting sites are located within one mile of the project area.

Lewis’ Woodpecker (*Melanerpes lewis*) —Utilize a wide range of treed habitats (forest, woodland, riparian). Nest in tree cavities. No known nesting sites are located within the project area. Area may be used for foraging and/or nesting.

Gray Vireo (*Vireo vicinior*) —Utilize Piñon-juniper and open juniper-grassland habitats. It is known to utilize the area (CNHP). No known nesting sites are located within the project area. Area may be used for foraging and/or nesting.

Pinyon Jay (*Gymnorhinus cyanocephalus*) —Utilize Piñon-juniper woodland habitats. Species was observed around the mine site during an on-site evaluation in January 2006. No known nesting sites are located within the project area. Area may be used for foraging and/or nesting.

JuniperTitmouse (*Baeolophus griseus*) —Utilize Piñon-juniper woodlands, especially juniper. Nest in tree cavities. No known nesting sites are located within the project area. Area may be

used for foraging and/or nesting.

Veery (*Catharus fuscescens*) — Utilize deciduous forests, riparian and shrubs. No known nesting sites are located within the project area. Area may be used for foraging and/or nesting.

Brewer's Sparrow (*Spizella breweri*) — See the Special Status Species section.

In addition to the above species, a wide variety of migrant bird species utilize Piñon–juniper habitats and surrounding areas for breeding and brood rearing.

Environmental Consequences:

Proposed Action – Approximately 11 acres would be impacted as a result of mining activity. Depending on timing of activities, removal of vegetation associated with mine expansion or exploration could cause direct impacts to migratory birds through the direct take of individuals or nests, and indirect impacts through the removal of suitable habitat for both nesting and foraging. Additionally, disruptive activities associated with human presence and active machinery would cause migratory birds to be displaced from the area around the activity. Mine expansion surface disturbance (8.3 acres) is more centralized, but would have an area of disruption for migratory birds. Size of the disrupted area would vary by species, but could be up to an approx. 0.5 mile buffer around the area for raptors. Mine exploration surface disturbance (2.7 acres) is much more dispersed across the area, and each exploration hole would also have a buffer around the area that could be considered as an area of disruptive activities. Impacts from both exploration and mining could have impacts to individuals, but would not likely result in effects at the population level.

Mitigation – To reduce impacts on migratory bird populations, it is recommended that no surface disturbing activities occur from May 15 through July 15. Alternatively, breeding bird surveys could be conducted during the breeding season, prior to surface disturbing activities. If no active nests are found, activities could proceed.

Cumulative Impacts – Also see Vegetation, Special Status Species, and Terrestrial Wildlife Section. Although relatively few acres, the mining activity would cumulatively add to other impacts in watershed on federal lands due to the increased surface disturbance, and could contribute to a reduction in quantity and/or quality of migratory bird habitat.

No Action Alternative – The mine area and exploration area would impact an area of 4.7 acres. The direct and indirect effects of the no action alternative on migratory birds would be similar to those described under the Proposed Action.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The project area supports a variety of terrestrial wildlife species including reptiles, small mammals, carnivores, birds, and big game. Examples species include garter snake, cottontail rabbit, least chipmunk, prairie dogs, coyote, bobcat, black bear, mountain lion, elk, mule deer, desert bighorn sheep, red-tailed hawk, and a large number of songbird

species. Terrestrial wildlife species of concern are addressed in the Threatened, Endangered, and Sensitive Species Section.

Both mule deer and elk are found in the unit. Mule deer are present year-round, but mostly use the area as winter range. The project area is severe winter range for both mule deer and elk. Winter concentration areas for both deer and elk are found in the lower elevations of the Paradox Valley. During most winters there is a high degree of overlap in mule deer and elk use on several of the wintering areas.

Large predators, such as coyotes, bobcats, and mountain lion are present in the area and use it regularly. Of the predators, coyotes are the most numerous and widespread. Black bear populations are likely limited to primarily the major drainages with well-developed riparian vegetation during years of low food production at the higher elevations. Mountain lion likely use almost all of this area throughout the year while hunting or raising young. Bobcats may also be found throughout most of the area.

Environmental Consequences:

Proposed Action – During mining and exploration activities, local wildlife would be displaced from the immediate area around the disturbance. The distance of that displacement would be species dependent. There is some potential for direct mortality of species which are unable to leave the area, or of species such as rattlesnakes, which may not be tolerated by miners. Depending on the severity of the winter, mining during the winter could impact mule deer and elk. Other direct and indirect impacts to terrestrial wildlife species would be similar to those described in Threatened, Endangered and Special Status Species and Migratory Bird sections.

Mitigation – To protect wintering big game and crucial habitats, no surface disturbing activities shall occur from December 1 through April 15 (San Juan San Miguel RMP). Exceptions or variances to this restriction may be considered and evaluated, in consultation with CPW, and approved by the Field Manager.

Cumulative Impacts – Also see Vegetation, Special Status Species, and Migratory Bird Section. Although relatively few acres, the mining activity would cumulatively add to other impacts in the watershed on federal lands due to the increased surface disturbance, and could contribute to a reduction in quantity and/or quality of terrestrial wildlife habitat. The types of impacts expected from all of the cumulative actions in the watershed would be similar to those described for the Proposed Action.

No Action Alternative – The mine area and exploration area would impact an area of 4.7 acres. The direct and indirect effects of the no action alternative on terrestrial wildlife species would be similar to those described under the Proposed Action.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation; Invasive, Non-native Species; and Wildlife, Aquatic): The proposal would have no detectable effect on meeting land health standards for Standard 3. A complete Land Health Assessment was conducted in 2009-2010 in the East Paradox area (BLM, 2011). The project area was found to be primarily meeting for Standard 3 (Native Communities) and 4 (Special

Status Species). One area was meeting with problems for Standard 3 for grass and forb cover and exotic weeds due to historic settlement and historic grazing. With mitigation as proposed, this project should not cause changes to meeting Land Health Standards for Native Plan and Animal Communities.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: Aquatic habitat is very limited within the project area. Aquatic habitat may be found adjacent to the project area in the Dolores and San Miguel Rivers. The project area is composed of primarily ephemeral washes and a few ephemeral ponds. No wetlands or riparian zones occur in the project area.

Environmental Consequences:

Proposed Action – Activities associated with mine expansion and exploration could have noticeable impact to aquatic wildlife. Also see the Threatened, Endangered and Sensitive Species section for information on federally listed fish, BLM sensitive fish & amphibians.

Mitigation – None

Cumulative Impacts – Also see Water Quality, Vegetation, Threatened, Endangered and Special Status Species, Migratory Birds, and Terrestrial Wildlife Section. Cumulative impacts for aquatic species on-site would not be noticeable. See the Threatened, Endangered and Sensitive Species section for information on federally listed fish, BLM sensitive fish & amphibians.

No Action Alternative – The mine area and exploration area would impact an area of 4.7 acres. The direct and indirect effects of the no action alternative on aquatic wildlife would be similar to those described under the Proposed Action.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation; Wildlife, Terrestrial; and Invasive, Non-native Species): A complete Land Health Assessment was conducted in 2009-2010 in the East Paradox area (BLM, 2011). The nearest streams or river assessed for Land Health Standard 5 (Water Quality) was the San Miguel and Dolores River. Both were found to be “meeting” Standard 5. Additionally, the project area was found to be primarily meeting for Standard 3 (Native Communities) and 4 (Special Status Species). One area was meeting with problems for Standard 3 for grass and forb cover and exotic weeds due to historic settlement and historic grazing. With mitigation as proposed, this project should not cause changes to meeting Land Health Standards for aquatic species.

WETLANDS & RIPARIAN ZONES, FLOODPLAINS

Affected Environment: There are not any riparian zones or flood plains in the vicinity of the project area. The closest is the Dolores River, which is approximately ½ mile away, and drainage from the project area leads away from the Dolores River. There are several livestock reservoirs,

which may support wetland vegetation and function as low quality wetlands. These are located within the project area, but outside the Plan boundary.

Environmental Consequences:

Proposed Action – There would not be impacts to riparian areas or floodplains. Impacts to wetlands would be minimal, and only wetlands associated with livestock ponds could be affected. Damage to these would be limited to minor increases in sediment input and a slightly increased possibility of weed introduction. These potential impacts would be minimized through weed control measures and by locating drilling and drill access disturbances away from any wetland area; a design feature requires drilling, drill access, and rehabilitation activities to be at least 25 feet away from the edge of wetland vegetation.

Mitigation – No additional mitigation is needed.

Cumulative Impacts – The Proposed Action when combined with past, present and reasonably foreseeable actions would have negligible impacts to riparian zones or wetlands at the watershed level. Mine and exploration activities would have minimal impacts on wetlands and no impacts on riparian areas.

No Action Alternative – There would be no impacts to riparian areas, floodplains or wetlands.

Finding on the Public Land Health Standard for Riparian areas and wetlands: The Proposed Action would have no bearing on the current land health rating for Standard 2.

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

Affected Environment:

Hydrology

Average annual precipitation is about 12 inches near the mine site. Much higher precipitation falls in the form of snow at the higher surrounding elevations. Precipitation from frontal events occurs during winter and spring months. These events are typically low intensity but can last for several days. In contrast, summer precipitation is commonly associated with the southwest monsoon air flow pattern producing short duration, high intensity rain events. These monsoonal events have the greatest potential to mobilize sediments and contaminants in the small ephemeral channels that drain the mine and surrounding area.

Standards and Classifications

The Clean Water Act of 1972 gives the Environmental Protection Agency (EPA), the authority to set effluent limits on discharges of pollutants into waters of the United States and regulate water quality standards for surface waters. The Clean Water Act also gives the EPA the ability to authorize state governments to administer the program while retaining oversight.

The State of Colorado passed the Colorado Water Quality Control Act, revised in 2002, granting authority to the Colorado Water Quality Control Commission to classify and assign numeric

standards to state waters. State waters are classified according to present beneficial uses, or beneficial uses that may be reasonably expected in the future. Beneficial use classifications include aquatic life, recreation, agriculture, and water supplies for various purposes. Numeric standards are assigned in order to define allowable concentrations of various parameters under the following categories: physical and biological, inorganic and metals. Water quality classifications and numeric standards for surface and downstream receiving waters in the planning area are contained in the Commission’s 5 CCR 1002-31, Regulation No. 35, Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins (Colorado Water Quality Control Commission 2012).

It is BLM policy that agency projects should meet or exceed water quality standards established by the State of Colorado for all water bodies located on or influenced by BLM-administered lands.

The Water Quality Classifications below lists the water quality classifications for the surface waters influenced by the mine area:

4 th Level Watershed	Stream Segment	Stream Classification ¹⁻⁵
14030004 Lower Dolores River	Mainstem of the Dolores River from the Little Gypsum Valley Bridge at the San Miguel/Montrose County line, to the Colorado/Utah border.	Aq Life Warm 1 Recreation E Agriculture
	All tributaries to the Dolores River, including all lakes, reservoirs and wetlands, from the bridge at Bradfield Ranch (Forest Route 505, near Montezuma/Dolores County Line) to the Colorado/Utah border, except for specific listings in Segments 3b, 4 and 5.	Aq Life Warm 2 Recreation E Agriculture

- 1- Waters are designated either warm or cold based on water temperature regime. Class 1 water's are capable of sustaining a wide variety of cold or warm water biota, while class 2 waters are not.
- 2- Recreation Class E - Existing Primary Contact Use. These surface waters are used for primary contact recreation or have been used for such activities since November 28, 1975.
- 3- Recreation Class P - Potential Primary Contact Use. These surface waters have the potential to be used for primary contact recreation.
- 4- Recreation Class N - Not Primary Contact Use
- 5- Waters that are suitable for irrigating crops usually grown in Colorado.
- 6- Waters that are suitable or intended to become suitable for potable water supplies.

Compliance with section 303(d) of the Clean Water Act requires Colorado to identify water where effluent limitations are not strong enough to attain water quality standards. These waters are placed on the 303(d) list. Each water body on the list must have a Total Maximum Daily Load Assessment (TMDL) prepared. The TMDL calculates the maximum quantity of a pollutant that may be added to a water body from all sources, including point sources, nonpoint sources, and natural background sources, without exceeding the applicable water quality criteria for that pollutant. The assessment also quantifies how much the pollutant would need to be reduced to meet the criteria.

The impaired surface waters table below shows the surface waters in the area that are on Colorado's impaired waters, 303(d) or Monitoring and Evaluation list (CDPHE, Water Quality Control Commission, 5 CCR 1002-93).

Impaired Surface Waters in the Area

Segment Description	Portion	Colorado's Monitoring & Evaluation Parameter(s)	Clean Water Act Section 303(d) Impairment	303(d) Priority
COGULD02 Dolores River from Little Gypsum Valley bridge to Colorado/Utah border	all	<i>E. coli</i>	Fe(Trec)	H

In addition to the state's water quality classifications and numeric standards, all surface waters of the State are subject to the Basic Standards (Colorado Department of Public Health and Environment, Water Quality Control Commission, Regulation NO. 31), which in part reads: state surface waters shall be free from substances attributable to human-caused point or nonpoint source discharge in amounts, concentrations or combinations that:

1. Can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud; or
2. form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or
3. produce color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or
4. are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or

5. produce a predominance of undesirable aquatic life; or
6. cause a film on the surface or produce a deposit on shorelines.

Water Quality Data

Two representative samples of waste rock were collected and sent for analysis to determine the potential constituents in the runoff from waste rock piles. The analytical results demonstrate a leachable fraction that is below the applicable Water Quality Standards. Laboratory results for these samples are included (Rimrock, 2012, Figures A.10.1 and A.10.2 of the EPP).

Water Rights

There are no springs or livestock ponds located in the project area.

Groundwater

Naturally occurring clay and sandstone layers associated with the Morrison formation inhibit the downward migration of waters from the project area. The closest aquifer emanates as contact springs 1000 feet below the mine near the Dolores River.

Environmental Consequences:

Proposed Action –

Some of the expected direct impacts within the mine permit area and the project area include:

- Surface compaction leading to increases in runoff and peak flows.
- Increased sediment transport, through erosion processes such as sheet, gully, rill erosion, and mass movement.
- Changes in surface water/groundwater recharge from artificial interception of storm waters in ditches and berms associated with roads and pads.
- Surface water contamination from spills or leaks within the mine area and the ore pad.
- Water depletions from mining activities and road dust abatement.

Water quality could be directly impacted during the mining process. Approximately 8.3 acres would be disturbed over the course of 10 years in the construction of the proposed mine and the associated waste rock piles, ore stockpile, and water detention facilities. Four water detention facilities are proposed to control runoff from the mine area. Each facility is engineered to control the 10 year 24 hour event and pass the 100 year 24 hour event. There is a 1% chance in any given year of the 100 year event occurring. This could result in overtopping of the detention facilities using the designed spillway. Storm flows would then be free to flow overland to ephemeral channels.

If such an event were to occur, the water quality of the three detention ponds designed to capture flows from the waste rock areas would likely be sediment laden but otherwise wouldn't exceed water quality standards as shown by the lab analysis of the waste rock piles. However, the ore pad detention facility could contain constituents that exceed water quality standards. If an event larger than the 10 year event were to occur, the ore pad pond is designed to overflow into the decline and fill the mine workings. This would prevent potentially contaminated waters from leaving the mine area.

In the larger project area, approximately 2.7 acres of soil would be disturbed in the exploration area by road building, clearing of pads, and the drilling of up to 150 exploration holes. A typical drill pad would be 12 feet by 30 feet and would include a 100 sq. foot mud pit. Drill pads would be accessed by up to approximately 4000 feet of new 10 foot wide roads. Water bars and berms would be used to channel surface runoff into existing ephemeral channels.

Shallow groundwater aquifers could potentially be impacted in the long term by mining activity, and accidental spills of toxic and/or hazardous materials. The impact of such spills would be minor due to the probable low volumes of spilled materials and localized extent of such spills. The potential for deeper groundwater contamination of uranium and other metals is low due to the stratified nature of the clay and sandstone layers in the Morrison formation.

Residual impacts from the Proposed Action include loss of soil to surface erosion during heavy precipitation events and likely captured in detention facilities. Some alteration in ephemeral stream flow characteristics could result from construction of the mine site and stockpiles. The magnitude of these changes is likely to be low.

Features from the proposed action for the mine area are required by the State of Colorado permitting process, and would help maintain water quality. These include a storm water management plan; seeding the topsoil stockpile with native vegetation; contour waste rock piles at a slope of 3:1 (H:V); the four down gradient detention ponds will hold a 10 year 24 hour event; use water bars and berms to divert storm water away from the ore storage pad, site roadways, and onsite facilities and into bypass diversion channels or detention basins; reclamation of disturbed areas as an ongoing practice during mining activities.

Exploration roads would be re-contoured and ripped prior to seeding with native seed. Additional mitigation measures are added (below) for the exploration activities in the project area.

Mitigation – Same as the two measures shown in the Soils section.

Cumulative Impacts – Although relatively few acres, the proposed mining activity would cumulatively add to other impacts in the watershed on federal lands due to the increased surface disturbance and potential for leaks or spills in the watershed. Additional impacts on BLM and Forest Service lands in the watershed include historical uranium mining, a superfund mill site, grazing, rights-of-way, recreation and travel infrastructure. The types of impacts expected from all of the cumulative actions in the watershed would be similar to those described for the Proposed Action. The cumulative effect of all the impacts in the watershed could contribute to decreased surface water quantity and quality.

No Action Alternative – The mine area and exploration area would impact an area of 4.7 acres. The direct and indirect effects of the no action alternative on water quality would be similar to those described under the Proposed Action.

Finding on the Public Land Health Standard for water quality: A complete Land Health Assessment was conducted in 2009-2010 in the East Paradox area (BLM, 2011). The

nearest streams or river assessed for Land Health Standard 5 was the San Miguel and Dolores River. Both were found to be “meeting” Standard 5. Soil surface indicators are used as surrogates to determine the potential ratings for water bodies. Surrogate indicators include the amount of bare soil surface, live plant basal coverage, and the amount of plant litter on the soil surface. None of the streams in the assessment were found to be “not meeting.” A rating of not meeting would indicate higher levels of suspended solids. In addition, neither of the water quality samples conducted found parameters exceeding State water quality standards. Uranium mining would not likely alter these Land Health Standard findings. Standard 5 would continue to be identified as met until further assessed.

WASTES, HAZARDOUS OR SOLID

Affected Environment: Hazardous materials and waste are not part of the natural environment. Some potentially hazardous materials have been used with the permit issued under the mining notice, limited to the area of the mining notice.

Waste rock from uranium mining operations is not classified as hazardous waste under the Resource Conservation and Recovery Act (RCRA). However, the management of waste rock, as well as uranium ore can be regulated by the Clean Water Act. Potential impacts to surface and groundwater are considered elsewhere in this EA under “Water Quality – Surface and Ground.”

Environmental Consequences:

Proposed Action – Some potentially hazardous materials would be used during mining. In addition, solid waste would be generated during these activities. Improper handling of these materials and wastes can affect the local environment.

According to 29 CFR 1910.1200(g), the operator is to maintain a file containing Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances which are utilized during the course of construction, mining and reclamation operations of this project. This file is to be available at all times at the site. Hazardous materials that could be found at the site include explosives and flammable or combustible motor fuels.

General and cumulative impacts are not anticipated, but are dependent upon responsible use of chemicals and immediate containment and adequate cleanup in the event of spills. The impact of the Proposed Action on exposure to hazardous or solid wastes would be low to moderate and short-term during construction and low and long-term during mining operations. The Mining Plan includes practices which should provide adequate management of hazardous substances/wastes and proper spill response.

With implementation of the Design Features from the Proposed Action, the impacts would be low and short term. These include posing signs to identify hazards, providing sanitary facilities, and reporting and cleaning up any spill.

Mitigation – None

Cumulative Impacts – With proper management of hazardous substances, long-term, negative impacts are not anticipated.

No Action Alternative – Negative impacts would not be anticipated if the Plan is followed. Mining and exploratory drilling could continue. However, no additional ore would be shipped.

ENVIRONMENTAL JUSTICE

Affected Environment: While analyzing a federal action, BLM identifies and addresses, as appropriate, disproportionately high and adverse human health and environmental effects of program, policies, or activities on minority or low income populations. Environmental Justice involves fair treatment, which means that no group of people, including a racial, ethnic, or socio-economic group, should bear a disproportionate share of negative environmental consequences resulting from a federal action.

Environmental Consequences:

Proposed Action – Minority, low-income or disadvantaged populations do not reside within or near the project area. The construction and location of project features would not disrupt any of these identified communities. No disproportionate negative impacts to these communities are anticipated.

Mitigation – None

Cumulative Impacts – None

No Action Alternative – Continued operation with the mining notice would not disrupt any of minority of low income populations.

SOCIO-ECONOMICS

Affected Environment: In the year 2011, the population of Montrose County was 40,810. From 2000, the population had grown by approximately twenty-two percent (Headwater Economics Toolkit - EPS-HDT).

The estimated number of people employed in Montrose County in 2011 was 18,270 (Headwater Economics Toolkit - EPS-HDT). Employment in agriculture, forestry and mining accounted for 5.7 percent (1,042 people) of total employment (employment for mining alone was not reported).

Environmental Consequences:

Proposed Action – The Proposed Action would minimally increase the number of jobs for people directly employed in the mineral industry. There could be approximately four new jobs associated with operations at the mine. It would indirectly contribute to the number of jobs in the goods and services industries that support the mining industry. These jobs would have minor, long-term beneficial effects on local communities such as Naturita and Nucla.

Housing availability is sufficient in most of the affordable local communities. The Proposed Action would be expected to have a negligible effect on the availability of affordable housing.

There would be little, if any, economic loss to private land owners from displacement of big game. Effects on big game would be minor, and any resulting reduction in private big game hunting within the vicinity of the project area would be minimal especially considering the low level of commercial hunting in the area.

Mitigation – None.

Cumulative Impacts – The Proposed Action would add cumulatively to employment and wages within the area.

No Action Alternative – If the Proposed Action were not implemented, no additional jobs would be directly created and there would be no beneficial effects on the number of jobs in the goods and services sectors that support the mining industry.

ACCESS AND TRANSPORTATION

Affected Environment: The Plan area is located three miles west of the old site of Uravan and about 15 miles northwest of Nucla, Colorado, on Club Mesa, above the confluence of the San Miguel and Dolores Rivers in western Montrose County, Colorado. Access to the mine site uses Colorado Highway 141, Montrose County (MC) EE22 (Long Park Road) and MC Road U16. The mine site is located adjacent to MC Road U16.

Each borehole pad area would be accessed by a 10 foot wide roadway, which depending on the location could use an existing exploration drill access road or use a newly constructed road which would be included in the proposed 4,000 linear feet of new road construction.

Environmental Consequences:

Proposed Action – The operator would maintain a current road use permit from Montrose County. The existing on-site road would be maintained as needed.

Mining would increase heavy and light truck traffic. Daily operations would require up to two pickup trucks per day. It is anticipated that ore would be loaded into trucks and hauled off-site for processing at a mill, with approximately twenty trips a month. Generation of dust when dry, rutting when wet and overall road deterioration would result if roads are not properly maintained or due to use in inclement weather. Impacts include road degradation, increases in traffic volume and the commensurate potential for increased accidents. Impacts would be anticipated as low to moderate and short term during mine development, and slight to low and long term during the life of the mine.

Mitigation – None.

Cumulative Impacts – Increased traffic would represent a low and long-term (life of mine)

cumulative impact to the transportation network. Other similar traffic could occur from mines (if later approved) in the DOE ULP area. Present and reasonably foreseeable impacts to transportation in the area include uranium mining, a superfund mill site, grazing, rights of ways, and recreation.

No Action Alternative – There would be no additional impacts to access and transportation beyond those associated with currently-permitted exploration and mining activities.

RANGE MANAGEMENT

Affected Environment: The project area is located within the Mesa Creek grazing allotment. Active grazing preference is 581 head of cattle from October 25 to June 6 for a total of 4,255 AUMs. There is a small amount of private land within the allotment and grazing capacity consists of 99% public land. The project area is in a part of the allotment which generally receives spring use during the months of April or May.

Environmental Consequences:

Proposed Action – No fence lines are crossed, therefore, no gates or cattle guards are required to aid in livestock control. The loss of forage available for livestock grazing due to vegetation disturbance would not be noticeable; depending on the area disturbance would be re-vegetated in the short and long term.

Mitigation – None

Cumulative Impacts – None

No Action Alternative – There would be no impacts to range management beyond those already occurring under the mining notice.

FOREST MANAGEMENT

Affected Environment: Most of the project area consists of a medium density Piñon-juniper community. These resources have very limited value locally as a source of firewood and posts for fence construction. The project area is not considered in the commercial forest base due to canopy composition and structure.

Environmental Consequences:

Proposed Action – The Proposed Action would not impact commercial forest products, as none of the project area is considered in the commercial forest base.

Mitigation – None

Cumulative Impacts – None

No Action Alternative – Under this alternative, there would be no additional project-related effects to existing woodlands beyond those already occurring under the notice.

FIRE

Affected Environment: Hot, dry conditions are normal during the summer months within the project area. Fire activity is a natural process in these environments. The vegetation types across the area of the Proposed Action are considered low to moderate fire risk. Over the past 20 years, lightning has caused dozens of fires in the vicinity, but they have not grown to become large fires.

Environmental Consequences:

Proposed Action – The Proposed Action is not expected to increase the risk of fire, or to affect the rate, duration, or frequency of future fires. Minor brush clearing surrounding potential future infrastructure could provide a minor, immeasurable benefit by removing excess fuel.

Mitigation – Mitigation, particularly in dry conditions, would reduce fire danger:

- Avoid parking hot vehicles over shrubs and grass.
- Use spark arresters on equipment generating sparks, including ATVs.

Cumulative Impacts – The Proposed Action is not expected to increase fire risk; therefore there would be no cumulative impacts.

No Action Alternative – Same as the proposed action.

NOISE

Affected Environment: Sound levels in the vicinity of the project area vary depending on proximity to a highway and other existing facilities, and fluctuate with temperature, humidity and wind. Topography could provide natural barriers to sound transmission or augment noise if located in elevated or exposed areas. The mine site is located on public lands with no residences in the vicinity.

Environmental Consequences:

Proposed Action – An increase in the local noise level would occur during mine development. Air compressors and generators would be used to power underground equipment. A loader would operate on the surface. The impact to the background noise level would be anticipated to be moderate to high and short-term. Most noise impacts terminate or decrease greatly after the mine site is constructed. During the mining, impacts would be low and long term. If noise becomes a nuisance with any mining operations, adequate muffling techniques would be applied. This could require the use of hospital type mufflers and other techniques to reduce noise levels to an acceptable level.

Mitigation – None

Cumulative Impacts – The Proposed Action would not add noticeably, if at all, to noise generated from other activities elsewhere.

No Action Alternative – Under this alternative, there would be no additional project-related effects to noise management beyond those already occurring under the notice. Impacts would generally be the same as the proposed action, but on a smaller scale.

RECREATION

Affected Environment: The primary recreation use of the project area is big game hunting, particularly during the latter part of the season when the animals are migrating through the area. Other recreational activities that occur in the general area are rock climbing, hiking, horseback riding, mountain biking, and OHV use. Because the area has been historically disturbed by mining activities and is not close to population centers, recreational use (other than hunting and rock climbing) is relatively low.

Environmental Consequences

Proposed Action – Overall, the Proposed Action would have very little if any impact on the recreational values of the area. The level of impact to recreation is anticipated to be low to moderate and short-term during mine development, and low to non-existent and long term during the life of the mine.

Mitigation - None

Cumulative Impacts – Because the Proposed Action would have very little if any impact on the recreational values of the area, cumulative impacts from other activities would be minor.

No Action Alternative – There would be no additional impacts to recreation beyond those associated with currently-permitted exploration and mining activities.

VISUAL RESOURCES

Affected Environment: The project area is located on Club Mesa almost directly above the confluence of the Dolores and San Miguel River which pass within a mile of the mine site. This diverse combination of landforms has created spectacular scenery with a variety of landscape types including broad to narrow river valleys, steep canyons, mesas, and rolling parkland.

Since the late 19th Century, mining and, to a lesser extent, ranching have impacted the natural appearance of Club Mesa and the surrounding area. The mesa tops show the effects of years of human activities. They are crossed by numerous roads used for mine exploration, mine access, and ranching. Mining exploration pits, adits, ventilation shafts, waste rock piles, surface mining pits, drainage impoundments, mine buildings, parking areas, and abandoned mining equipment

show evidence of historic mining activities. Several active mines are also present. Visible ranching improvements include fencing, corrals, and stock ponds.

Environmental Consequences

Proposed Action – Impacts to visual resources are considered to be minimal. There would be little impact from the access roads since most already exist. The mine site would include an expanded waste rock stockpile and ore stockpile. The stockpiles would increase in height and extent over the life of the mine and could be visible in distant views, but not from the rivers or highway. Near the mine site, construction activities could cause slight to low short-term impacts. The increase in stockpile size could impose a low to moderate long term impact on the visual resource until vegetation becomes established on the site.

Mitigation – None

Cumulative Impacts – Because impacts to visual resources are considered to be minimal, cumulative impacts from other activities would be minor.

No Action Alternative – There would be no additional impacts to visual resources beyond those associated with currently-permitted exploration and mining activities.

GEOLOGY AND MINERALS

Affected Environment: Uranium is found in the Salt Wash Member of the Jurassic age Morrison formation. The majority of the ore is formed in tabular sandstone bodies ranging in size from several tons to millions of tons. The deposits were formed when uranium and vanadium enriched groundwater flowed through reducing environments. The reducing environment resulted in precipitation of the uranium and vanadium minerals. Grades of the deposits in the Uravan Mineral Belt range from 0.16 percent to 0.25 percent U_3O_8 . Vanadium is also associated with these deposits; the ratio of vanadium to uranium is approximately 4:1 in the area.

There are active mining claims (see Appendix A, Table 1). There is an existing oil and gas lease (COC-070097). The entire Section 31 is federal fluid minerals and was leased in 2006 with a projected expiration date of 2017.

The potential for solid leasable minerals is low. There are no solid leasable mineral leases for either coal or non-energy solid minerals. At this location, there are not sand and gravel or other salable mineral deposits. There are no salable mineral sales permits present.

Environmental Consequences:

Proposed Action – Mining would result in waste rock and ore being transported to the surface and stockpiled near the mine portal. The ore would be hauled to the White Mesa Mill in Blanding, Utah or to the proposed Piñon Ridge Mill in Paradox Valley, Colorado; the superfluous rock stockpiles would remain. Subsidence could result as mining occurs, but is unlikely due to the competency of the host rock and the mining methods used. If subsidence

should occur, the surface would experience a gradual lowering, with some cracking of surficial rock. The impacts would be low in the short term and in the long term. This action would not prevent oil and gas exploration activities from occurring. Since there are no deposits of sand and gravel, there is no impact to salable minerals actions.

Mitigation – None

Cumulative Impacts – This project, when combined with other mining projects, would incrementally add to the removal of ore and potential subsidence over small areas.

No Action Alternative – There would be no additional impacts to geology and minerals beyond those associated with currently-permitted exploration and mining activities.

PALEONTOLOGY

Affected Environment: The Proposed Action is situated in an area of known paleontological resources including Jurassic period Morrison formation and other Jurassic and Cretaceous outcrops known for vertebrate fossil bearing members.

Environmental Consequences:

Proposed Action – No new disturbance would be anticipated within the known fossil bearing members. Should the Proposed Action be altered in such a way as to disturb previously undisturbed fossil strata or outcrops, a complete paleontological inventory of the disturbance would be required before the operation commences.

Cumulative Impacts – None

No Action Alternative – No new impacts to paleontological resources would be anticipated.

CUMULATIVE IMPACTS SUMMARY

Cumulative impacts could result from the proposed activity when added to the impacts from all other past, present and reasonably foreseeable future activity, regardless of who is conducting such activity. For the purpose of this EA, the area considered for cumulative analysis is the west end of Montrose County. Approximately 80% of the lands in this region are federal surface and federal minerals; the remainder is private and state lands.

Historically the western portion of Montrose County was agricultural and ranch lands. In the late 1800's uranium was discovered in the area. The area experienced four boom and bust mining cycles for radium, vanadium and uranium. As a result of the mining in the past, there are numerous mine sites, many of which have been reclaimed. Colorado Geological Survey Bulletin 40 shows 659 radioactive mineral occurrences in Montrose County. In 2004, there were large increases in the market prices for uranium and vanadium which resulted in renewed interest in staking of mining claims, as well as drilling and exploration activity on public lands. This

activity resulted in the submission of two 3809 Plans of Operation and several 3809 Notices in the UFO.

In the Uravan Mineral Belt, the UFO now has five active 3809 Plans of Operations (the J Bird Mine, the Last Chance Mine the Prince Albert Mine, the Van #4 Shaft and the Mineral Joe Mine) and three active 3809 Mining Notices.

The Department of Energy is in the process of completing an Environmental Impact Statement (EIS) analyzing continued leasing of uranium on federally withdrawn lands (DOE, 2013). If Alternative 4, the preferred alternative, is selected it is estimated there could be up to 19 different mining operations on the DOE lease tracts (DOE, 2013).

Oil and gas exploration wells could increase by a small amount. Currently in the west-end area of Montrose County, four exploratory oil and gas wells have been drilled in the past 5 years; one being capable of production and three were dry holes that have been abandoned.

Other actions contributing to impacts, cumulatively, include livestock grazing, vegetation treatments, wildlife use, rights-of-ways, recreation, and travel infrastructure.

The cumulative impacts resulting from the Proposed Action are expected to be minimal given the small size of the proposed mining operation taking into consideration the proposed design features with the addition of the proposed mitigation measures.

INTERDISCIPLINARY REVIEW: The following BLM personnel have contributed to and have reviewed this environmental assessment.

<u>Name</u>	<u>Title</u>	<u>Area of Responsibility</u>
Rob Ernst	Geologist	Minerals, Project Coordinator
Ken Holsinger	Biologist	Threatened and Endangered Species, Sensitive Species
Missy Siders	Wildlife Biologist/T & E	Wildlife, Migratory Birds
Glade Hadden	Archaeologist	Cultural Resources, Native American Religious Concerns, Paleontology
Kelly Homstad	Fire Use Specialist	Air Quality, Fire, Forestry
Lynae Rogers	Rangeland Specialist	Invasive Species
Angela Losasso	Rangeland Specialist	Range Management
Jedd Sondergard	Hydrologist	Water Resources, Soils
Amanda Clements	Ecologist	Vegetation, Riparian
Teresa Pfifer	Lands & Minerals Staff Supvr.	Realty and Minerals
Julie Jackson	Recreation Planner	Recreation, Visual Resources, Transportation
Edd Franz	Recreation Planner	Wilderness, Lands with Wilderness Character
Bruce Krickbaum	NEPA Coordinator	NEPA compliance, Environmental Justice

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CDPHE, Water Quality Control Commission, Regulation #35, Classifications and Numeric Standards for the Gunnison and Lower Dolores River Basin, (5 CCR 1002-35), Amended November 5, 2012, effective March 30, 2013.

CDPHE, Water Quality Control Commission, Regulation #93, Colorado's 303(d) list of Impaired Waters and Monitoring and Evaluation List, (5 CCR 1002-93), Adopted February, 2012, Effective March 30, 2012.

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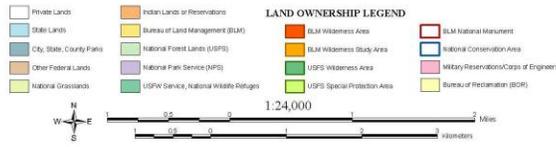
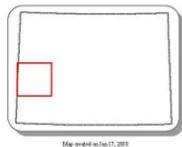
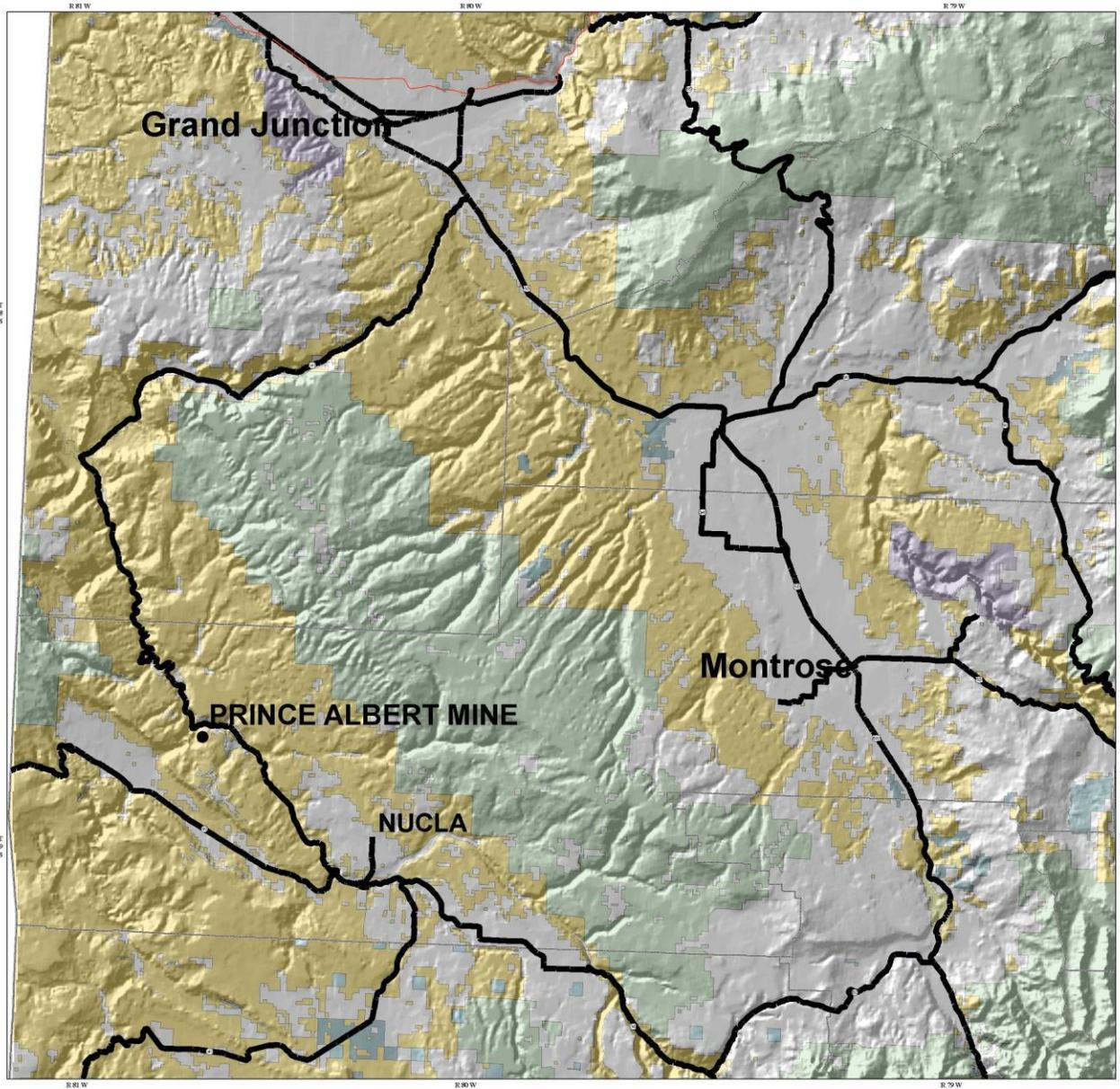
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Appendix A

Table 1: Mining Claim Information

Claim Name	CMC Number
Prince Albert #1	254069
Prince Albert #2	254070
Prince Albert #3	254071
Prince Albert #4	254652
Prince Albert #5	254653
Prince Albert #6	254654
Prince Albert #7	254656
Prince Albert #8	254657
Prince Albert #10	254659
Prince Albert #11	254660
Prince Albert #15	257825



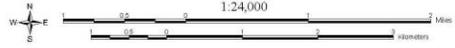
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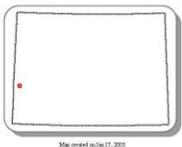
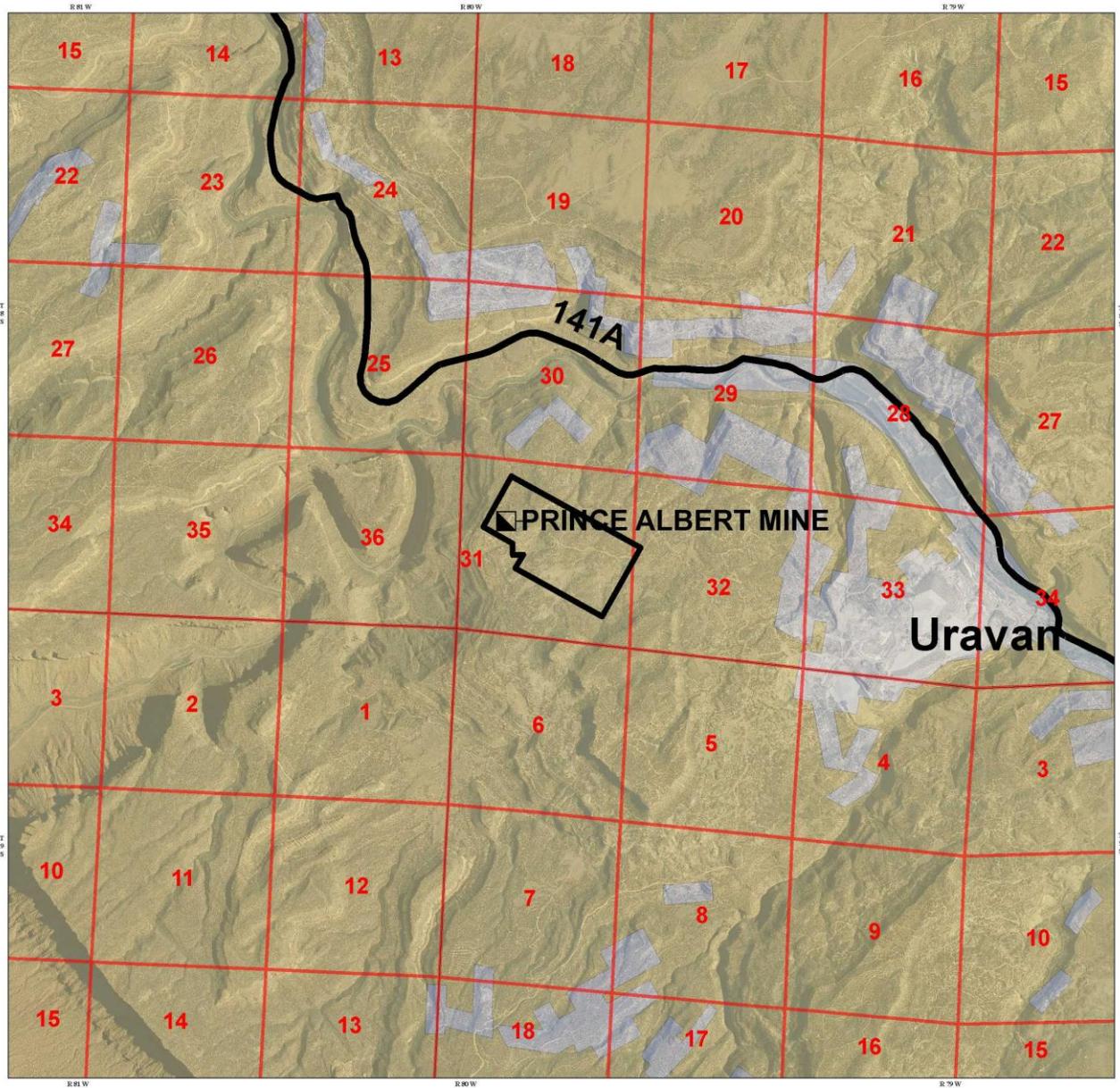
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COLORADO STATE OFFICE

Map produced for the BLM, Colorado State Office
Mapping Services Group
Last State updated on 07/11/2005

CAUTION:
Land ownership data is derived from both
aerial photography and GIS data. This data
may be outdated and is not intended to be
used for legal purposes. This map is for
informational purposes only. Please refer to
the current data.



Map 1: Regional Location Map for the Prince Albert Mine Plan Project



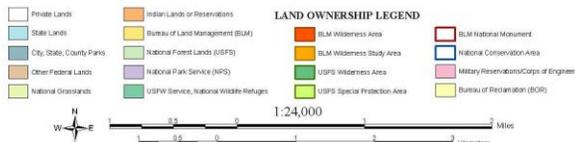
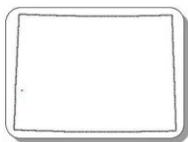
Surface Management Responsibility - Custom 1:24,000 Scale



UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COLORADO STATE OFFICE
Map produced by the BLM, Colorado State Office
Inventory Collection Group
Land Status updated as of 11/1/2008

CAUTION: This map is for informational purposes only. It is not intended to be used as a legal document. The information on this map is based on the best available data as of the date of publication. The information on this map is not intended to be used as a legal document. The information on this map is not intended to be used as a legal document.

Map 2: Location Map for the Prince Albert Mine Plan Project



Surface Management Responsibility - Custom 1:24,000 Scale



Map 3: Mining Claim Boundary Map for the Prince Albert Mine Plan Project



Photo 1: Regional Aerial Photo for the Prince Albert Mine Plan Project



Photo 2: Prince Albert Mine Portal (decline type)

Appendix B

THREATENED AND ENDANGERED SPECIES OF THE UFO ¹									
SPECIES	STATUS	HABITAT DESCRIPTION ²	CRITICAL HABITAT (Y/N)? ³	KNOWN? ⁴	RANGE (Y/N)? ⁵	HABITAT (Y/N)? ⁶	NO EFFECT (X)? ⁷	MENLAE (X) ⁸	MELAE (X) ⁹
<i>FISH</i>									
Bonytail <i>Gila elegans</i>	E	Warm-waters of the Colorado River mainstem and tributaries, some reservoirs; flooded bottomlands for nurseries; pools and eddies over rocky substrates with silt-boulder mixtures for spawning	No	None	Y	N			X
Humpback chub <i>Gila cypha</i>	E	Warm-water, canyon-bound reaches of Colorado River mainstem and larger tributaries; turbid waters with fluctuating hydrology; young require low-velocity, shoreline habitats such as eddies and backwaters	No	None	Y	N			X
Razorback sucker <i>Xyrauchen texanus</i>	E	Warm-water reaches of the Colorado River mainstem and larger tributaries; some reservoirs; low velocity, deep runs, eddies, backwaters, sidecanyons, pools, eddies; cobble, gravel, and sand bars for spawning; tributaries, backwaters, floodplain for nurseries	No	None	Y	N			X

THREATENED AND ENDANGERED SPECIES OF THE UFO ¹

SPECIES	STATUS	HABITAT DESCRIPTION ²	CRITICAL HABITAT (Y/N)? ³	KNOWN? ⁴	RANGE (Y/N)? ⁵	HABITAT (Y/N)? ⁶	NO EFFECT (X)? ⁷	MENLAE (X) ⁸	MELAE (X) ⁹
Colorado pikeminnow <i>Ptychocheilus lucius</i>	E	Warm-waters of the Colorado River mainstem and tributaries; deep, low velocity eddies, pools, runs, and nearshore features; uninterrupted streams for spawning migration and young dispersal; also floodplains, tributary mouths, and side canyons; highly complex systems	No	None	Y	N			X
Greenback cutthroat trout <i>Oncorhynchus clarki stomias</i>	T	Cold water streams and lakes with adequate spawning habitat (riffles), often with shading cover; young shelter in shallow backwaters	No	None	N	N	X		
MAMMALS									
Black-footed ferret ¹⁰ <i>Mustela nigripes</i>	E	Prairie dog colonies for shelter and food; >200 acres of habitat with at least 8 burrows/acre	No	None	N	N	X		
Canada lynx <i>Lynx canadensis</i>	T	Spruce-fir, lodgepole pine, willow carrs, and adjacent aspen and mountain shrub communities that support snowshoe hare and other prey	No	None	N	N	X		

THREATENED AND ENDANGERED SPECIES OF THE UFO ¹

SPECIES	STATUS	HABITAT DESCRIPTION ₂	CRITICAL HABITAT (Y/N)? ³	KNOWN? ₄	RANGE (Y/N)? ⁵	HABITAT (Y/N)? ⁶	NO EFFECT (X)? ⁷	MENLAE (X) ⁸	MELAE (X) ⁹
North American Wolverine ¹³ <i>Gulo gulo luscus</i>	P	Alpine and arctic tundra, boreal and mountain forests (primarily coniferous). Limited to mountains in the south, especially large wilderness areas.	No	None	N	N	X		
Gunnison's prairie dog <i>Cynomys gunnisoni</i>	C	Level to gently sloping grasslands, semi-desert shrublands, and montane shrublands, from 6,000'-12,000 in elevation	No	None	Prairie population only	N	X		
<i>BIRDS</i>									
Mexican spotted owl ¹¹ <i>Strix occidentalis</i>	T	Mixed-conifer forests and steep-walled canyons with minimal human disturbance	No	None		N	X		
Southwestern willow flycatcher ¹¹ <i>Empidonax traillii eximus</i>	E	For breeding, riparian tree and shrub communities along rivers, wetlands, and lakes; for wintering, brushy grasslands, shrubby clearings or pastures, and woodlands near water	No	None	N	N	X		

THREATENED AND ENDANGERED SPECIES OF THE UFO ¹

SPECIES	STATUS	HABITAT DESCRIPTION ²	CRITICAL HABITAT (Y/N)? ³	KNOWN? ⁴	RANGE (Y/N)? ⁵	HABITAT (Y/N)? ⁶	NO EFFECT (X)? ⁷	MENLAE (X) ⁸	MELAE (X) ⁹
Gunnison sage grouse ¹² <i>Centrocercus minimus</i>	P	Sagebrush communities (especially big sagebrush) for hiding and thermal cover, food, and nesting; open areas with sagebrush stands for leks; sagebrush-grass-forb mix for nesting; wet meadows for rearing chicks	No	None	Y	N	X		
Western yellow-billed cuckoo <i>Coccyzus americanus</i>	C	Riparian, deciduous woodlands with dense undergrowth; nests in tall cottonwood and mature willow riparian, moist thickets, orchards, abandoned pastures	No	None	Y	N	X		
PLANTS									
Clay-loving wild buckwheat <i>Eriogonum pelinophilum</i>	E	Mancos shale badlands in salt desert shrub communities, often with shadscale, black sagebrush, and mat saltbush; 5200' – 6400' in elevation	No	None	N	N	X		
Colorado hookless cactus <i>Sclerocactus glaucus</i>	T	Salt-desert shrub communities in clay soils on alluvial benches and breaks, toe slopes, and deposits often with cobbled, rocky, or graveled surfaces; 4500' – 6000' in	No	None	N	N	X		

THREATENED AND ENDANGERED SPECIES OF THE UFO ¹									
SPECIES	STATUS	HABITAT DESCRIPTION ²	CRITICAL HABITAT (Y/N)? ³	KNOWN? ⁴	RANGE (Y/N)? ⁵	HABITAT (Y/N)? ⁶	NO EFFECT (X)? ⁷	MENLAE (X) ⁸	MELAE (X) ⁹
<i>INVERTEBRATES</i>									
Uncompahgre fritillary butterfly ¹¹ <i>Boloria acrocne</i>	E	Restricted to moist, alpine slopes above 12,000' in elevation with extensive snow willow patches; restricted to San Juan Mountains	No	None	N	N	X		

¹ U.S. Fish and Wildlife Service. 2009. Federally listed species in Colorado. Official correspondence, February.

² Van Reyper G. 2006. Bureau of Land Management TES [threatened, endangered, sensitive] species descriptions. Uncompahgre Field Office, Montrose, CO, updated 2009/2010. Unpublished document.

³ Designated Critical Habitat in Project Area?

⁴ Potential and/or known occurrences in Project Area? Assessment based on UFO files and GIS data, partner data, and local knowledge.

⁵ Project area is within the current known range of the species?

⁶ Project area contains suitable habitat for the species?

⁷ Project activities will have “No Effect” to the species or it’s habitat

⁸ Project activities “May Effect, Not Likely to Adversley Effect” to the species or it’s habitat

⁹ Project activities “May Effect, Likely to Adversley Effect” to the species or it’s habitat

¹⁰ Black-footed ferret believed to be extirpated from this portion of its range.

¹¹ Species not known to occur within UFO boundaries, but known to occur in close proximity.

¹² U.S. Fish and Wildlife Service. 2013. 78FR2486 Proposed Listing, 78FR7540 Proposed Critical habitat.

¹³ U.S. Fish and Wildlife Service. 2013. 78FR7864 Proposed Listing, 78FR7890 Establishment of a Nonessential Experimental Population

Appendix C

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ^{2, 3}	KNOWN ⁴	RANGE? ⁵	HABITAT? ⁶	NO EFFECT? ⁷	MAI ⁸	LFL ⁹
<i>FISH</i>							
Roundtail chub <i>Gila robusta</i>	Warm-water rocky runs, rapids, and pools of creeks and small to large rivers; also large reservoirs in the upper Colorado River system; generally prefers cobble-rubble, sand-cobble, or sand-gravel substrate	None	Y	N	X		
Bluehead sucker <i>Catostomus discobolus</i>	Large rivers and mountain streams, rarely in lakes; variable, from cold, clear mountain streams to warm, turbid streams; moderate to fast flowing water above rubble-rock substrate; young prefer quiet shallow areas near shoreline	None	Y	N	X		
Flannelmouth sucker <i>Catostomus latipinnis</i>	Warm moderate-to large-sized rivers, seldom in small creeks, absent from impoundments; pools and deeper runs often near tributary mouths; also riffles and backwaters; young usually in shallower water than are adults	None	Y	N	X		

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ^{2, 3}	KNOWN ⁴	RANGE? ⁵	HABITAT? ⁶	NO EFFECT? ⁷	MAI ⁸	LFL ⁹
Colorado River cutthroat trout <i>Oncorhynchus clarki pleuriticus</i>	Cool, clear streams or lakes with well-vegetated streambanks for shading cover and bank stability; deep pools, boulders, and logs; thrives at high elevations	None	Y	N	X		
MAMMALS							
Desert bighorn sheep <i>Ovis canadensis nelsoni</i>	Steep, mountainous or hilly terrain dominated by grass, low shrubs, rock cover, and areas near open escape and cliff retreats; in the resource area, concentrated along major river corridors and canyons	None	Y	Winter Range only	X		
White-tailed prairie dog ¹⁴ <i>Cynomys leucurus</i>	Level to gently sloping grasslands and semi-desert grasslands from 5,000' – 10,000' in elevation	None	N	N	X		
Kit fox <i>Vulpes macrotis</i>	Semi-desert shrublands of saltbrush, shadscale and greasewood often in association with prairie dog towns	None	N	N	X		

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ^{2, 3}	KNOWN ⁴	RANGE? ⁵	HABITAT? ⁶	NO EFFECT? ⁷	MAI ⁸	LFL ⁹
Allen's (Mexican) big-eared bat <i>Idionycteris phyllotis</i>	Ponderosa pine, Piñon-juniper woodland, oak brush, riparian woodland (cottonwood); typically found near rocky outcrops, cliffs, and boulders; often forages near streams and ponds. Thought to be in the West End.	None	Y	Y		X	
Big free-tailed bat <i>Nyctinomops macrotis</i>	Rocky areas and rugged terrain in desert and woodland habitats; roosts in rock crevices in cliffs and in buildings caves, and occasionally tree holes	None	Y	Y		X	
Spotted bat <i>Euderma maculatum</i>	Desert shrub, ponderosa pine, Piñon-juniper woodland, canyon bottoms, open pasture, and hayfields; roost in crevices in cliffs with surface water nearby	None	Y	Y		X	
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	Mesic habitats including coniferous forests, deciduous forests, sagebrush steppe, juniper woodlands, and mountain; maternity roosts and hibernation in caves and mines; does not use crevices or cracks; caves, buildings, and tree cavities for night roosts	None	Y	Y		X	

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ² ₃	KNOWN ⁴	RANGE? ⁵	HABITAT? ⁶	NO EFFECT? ⁷	MAI ⁸	LFL ⁹
Fringed myotis <i>Myotis thysanodes</i>	Desert, grassland, and woodland habitats including ponderosa pine, Piñon/juniper, greasewood, saltbush, and scrub oak; roosts in caves, mines, rock crevices, and buildings	None	Y	Y		X	
BIRDS							
Bald eagle ⁵ <i>Haliaeetus leucocephalus</i>	Nests in forested rivers and lakes; winters in upland areas, often with rivers or lakes nearby	None	Y	Winter Range Only		X	
American peregrine falcon ⁵ <i>Falco peregrines anatum</i>	Open country near cliff habitat, often near water such as rivers, lakes, and marshes; nests on ledges or holes on cliff faces and crags	None	Y	Y		X	
Northern goshawk <i>Accipiter gentilis</i>	Nests in a variety of forest types including deciduous, coniferous, and mixed forests including ponderosa pine, lodgepole pine, or in mixed-forests with fir and spruce; also nest in aspen or willow forests; migrants and wintering individuals can be observed in all coniferous forest types	None	Y	Marginal Habitat		X	

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ² ₃	KNOWN ₄	RANGE? ₅	HABITAT? ₆	NO EFFECT? ₇	MAI ⁸	LFL ⁹
Ferruginous hawk <i>Buteo regalis</i>	Open, rolling and/or rugged terrain in grasslands and shrubsteppe communities; also grasslands and cultivated fields; nests on cliffs and rocky outcrops.	None	Y		X		
Burrowing owl ¹⁵ <i>Athene cunicularia</i>	Level to gently sloping grasslands and semi-desert grasslands; Prairie dog colonies for shelter and food	None	Y	N	X		
Columbian sharp-tailed grouse <i>Tympanuchus phasianellus columbian</i>	Native bunchgrass and shrub-steppe communities for nesting; mountain shrubs including serviceberry are critical for winter food and escape cover. Thought to be extirpated from UFO.	None	N		X		
Long-billed curlew <i>Numenius americanus</i>	Lakes and wetlands and adjacent grassland and shrub communities. Rare occurrence.	None	Rare	N	X		
White-faced ibis <i>Plegadis chihi</i>	Marshes, swamps, ponds and rivers	None	Y	N	X		
American white pelican <i>Pelecanus erythrorhynchos</i>	Typically large reservoirs but also observed on smaller water bodies including ponds; nests on islands	None	Y	N	X		

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ^{2, 3}	KNOWN ⁴	RANGE? ⁵	HABITAT? ⁶	NO EFFECT? ⁷	MAI⁸	LFL⁹
Brewer's sparrow <i>Spizella berweri</i>	Breeds primarily in sagebrush shrublands, but also in other shrublands such as mountain mahogany or rabbitbrush; migrants seen in wooded, brushy, and weedy riparian, agricultural, and urban areas; occasionally observed in Piñon-juniper	None	Y	Y		X	
Black swift ¹⁵ <i>Cypseloides niger</i>	Nests on precipitous cliffs near or behind high waterfalls; forages from montane to adjacent lowland habitats. Rare.	None	Y	N	X		
REPTILES AND AMPHIBIANS							
Longnose leopard lizard <i>Gambelia wislizenii</i>	Desert and semidesert areas with scattered shrubs or other low plants; e.g., sagebrush; areas with abundant rodent burrows, typically below 5,000' in elevation	None	Y	Y		X	
Midget faded rattlesnake ¹³ <i>Crotalus oreganus concolor</i>	Rocky outcrops for refuge and hibernacula, often near riparian; upper limit of 7500'-9500' in elevation	None	Y	Y		X	

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ² ₃	KNOWN ₄	RANGE? ₅	HABITAT? ₆	NO EFFECT? ₇	MAI ⁸	LFL ⁹
Milk snake <i>Lampropeltis triangulum taylori</i>	Variable types including shrubby hillsides, canyons, open ponderosa pine stands and Piñon-juniper woodlands, arid river valleys and canyons, animal burrows, and abandoned mines; hibernates in rock crevices	None	Y	Y		X	
Northern leopard frog ¹⁴ <i>Lithobates pipiens</i>	Springs, slow-moving streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes; in summer, commonly inhabits wet meadows and fields; may forage along water's edge or in nearby meadows or fields	None	Y	Y		X	
Canyon treefrog <i>Hyla arenicolor</i>	Rocky canyon bottoms along intermittent or perennial streams in temporary or permanent pools or arroyos ; semi-arid grassland, Piñon-juniper, pine-oak woodland, scrubland, and montane zones; elevation 1000' - 10,000'	None	Y	Y		X	
Boreal toad <i>Anaxyrus boreas boreas</i>	Mountain lakes, ponds, meadows, and wetlands in subalpine forest (e.g., spruce, fir, lodgepole pine, aspen); feed in meadows and forest openings near water but sometimes in drier forest habitats	None	N	N	X		

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ² ₃	KNOWN ⁴	RANGE? ⁵	HABITAT? ⁶	NO EFFECT? ⁷	MAI ⁸	LFL ⁹
<i>PLANTS</i>							
Debeque milkvetch <i>Astragalus debequaeus</i>	Varicolored, fine-textured, seleniferous, saline soils of the Wasatch Formation-Atwell Gulch Member; elevation 5100' – 6400'	None	N	N	X		
Grand Junction milkvetch <i>Astragalus linifolius</i>	Sparsely vegetated habitats in Piñon-juniper and sagebrush communities, often within Chinle and Morrison Formation and selenium-bearing soils; elevation 4800' – 6200'	None	N	N	X		
Naturita milkvetch <i>Astragalus naturitensis</i>	Cracks and ledges of sandstone cliffs and flat bedrock area typically with shallow soils, within Piñon-juniper woodland; elevation 5400' – 6700'	None	Y	Y		X	
San Rafael milkvetch <i>Astragalus rafaelsensis</i>	Banks of sandy clay gulches and hills, at the foot of sandstone outcrops, or among boulders along dry watercourses in seleniferous soils derived from shale or sandstone formations; elevation 4500' – 5300'	None	Y	Y		X	
Sandstone milkvetch <i>Astragalus sesquiflorus</i>	Sandstone rock ledges (Entrada formation), domed slickrock fissures, talus under cliffs, sometimes in sandy washes; elevation 5000' – 5500'	None	Y	Y		X	

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ² ₃	KNOWN ₄	RANGE? ₅	HABITAT? ₆	NO EFFECT? ₇	MAI ⁸	LFL ⁹
Gypsum Valley cateye <i>Cryptantha gypsophila</i>	Confined to scattered gypsum outcrop and grayish-white, often lichen-covered, soils of the Paradox Member of the Hermosa Formation; often the dominant plant at these sites; elevation 5200' – 6500'	None	N	N	X		
Fragile (slender) rockbrake <i>Cryptogramma stelleri</i>	Cool, moist, sheltered calcareous cliff crevices and rock ledges	None	N	N	X		
Kachina daisy (fleabane) ¹⁵ <i>Erigeron kachinensis</i>	Saline soils in alcoves and seeps in canyon walls; elevation 4800' – 5600'	None	N	N	X		
Montrose (Uncompahgre) bladderpod <i>Lesquerella vicina</i>	Sandy-gravel soil mostly of sandstone fragments over Mancos Shale (heavy clays) mainly in Piñon-juniper woodlands or in the ecotone between it and salt desert scrub; also in sandy soils derived from Jurassic sandstones and in sagebrush steppe communities; elevation 5800' – 7500'	None	N	N	X		

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ² ₃	KNOWN ⁴	RANGE? ⁵	HABITAT? ⁶	NO EFFECT? ⁷	MAI ⁸	LFL ⁹
Colorado (Adobe) desert parsley <i>Lomatium concinnum</i>	Adobe hills and plains on rocky soils derived from Mancos Formation shale; shrub communities dominated by sagebrush, shadscale, greasewood, or scrub oak; elevation 5500' – 7000'	None	N	N	X		
Paradox Valley (Payson's) lupine <i>Lupinus crassus</i>	Piñon-juniper woodlands, or clay barrens derived from Chinle or Mancos Formation shales, often in draws and washes with sparse vegetation; elevation 5000' – 5800'	None	N	N	X		
Dolores skeleton plant ¹⁵ <i>Lygodesmia doloresensis</i>	Reddish purple, sandy alluvium and colluviums of the Cutler Formation between the canyon walls and the river in juniper, shadscale, and sagebrush communities; elevation 4000' – 5500'	None	N	N	X		
Eastwood's monkey-flower <i>Mimulus eastwoodiae</i>	Shallow caves and seeps on steep canyon walls; elevation 4700' – 5800'	None	Y	N	X		
Paradox (Aromatic Indian) breadroot <i>Pediomelum aromaticum</i>	Open Piñon-juniper woodlands in sandy soils or adobe hills; elevation 4800' – 5700'	None	Y	Y		X	

BLM SENSITIVE SPECIES OF THE UFO ¹							
SPECIES	HABITAT DESCRIPTION ² ₃	KNOWN ⁴	RANGE? ⁵	HABITAT? ⁶	NO EFFECT? ⁷	MAI ⁸	LFL ⁹
<i>INVERTEBRATES</i>							
Great Basin silverspot butterfly <i>Speyeria nokomis nokomis</i>	Found in streamside meadows and open seepage areas with an abundance of violets	None	N	N	X		

¹ Based on Colorado BLM State Director's Sensitive Species List (Last update: April 15, 2011).

² Van Reyper G. 2006. Bureau of Land Management TES [threatened, endangered, sensitive] species descriptions. Uncompahgre Field Office, Montrose, CO, updated 2009/ 2010. Unpublished document.

³ Spackman SB, JC Jennings, C Dawson, M Minton, A Kratz, C Spurrier. 1997. Colorado rare plant field guide. Prepared for the BLM, USFS, and USFWS by the Colorado Natural Heritage Program.

⁴ Potential and/or known occurrences in Project Area? Assessment based on UFO files and GIS data, partner data, and local knowledge.

⁵ Project area is within the current known range of the species?

⁶ Project area contains suitable habitat for the species?

⁷ Project activities will have no effect to the species or it's habitat

⁸ Project activities may effect individuals of the species or it's habitat, but not likely to result in a trend toward federal listing

⁹ Project activities are likely to result in a trend toward federal listing for the species

¹⁰ ESA delisted species.

¹¹ Federal candidate species; in accordance with BLM policy and Manual 6840, candidate and proposed species are to be managed and conserved as BLM sensitive species. For the Gunnison prairie dog, candidate status includes only those populations occurring in the "montane" portion of the species' range.

¹² Species not known to occur in UFO.

¹³ Validity of subspecies designation is in question by taxonomists.

¹⁴ Species was petitioned for listing and is currently under status review by FWS, and a 12-month finding is pending; i.e., listing of the species throughout all or a significant portion of its range may be warranted.

¹⁵ Species not on BLM Colorado State Director's Sensitive List; included at the Field Office level to account for recent sightings, proximate occurrences, and/or potential habitat.

Appendix D

BIRDS OF CONSERVATION CONCERN OF THE UFO ¹									
SPECIES	HABITAT DESCRIPTION ²	RANGE/STATUS ^{2, 3}	Populations Trends ⁴	KNOWN ⁵	RANGE ⁶	HABITAT? ⁷	NO EFFECT? ⁸	MAI ⁹	LFL ¹⁰
Gunnison sage grouse <i>Centrocercus minimus</i>	Sagebrush communities (especially big sagebrush) for hiding and thermal cover, food, and nesting; open areas with sagebrush stands for leks; sagebrush-grass-forb mix for nesting; wet meadows for rearing chicks	Year-round resident, breeding.	-5.5 (-6.1) <u>-7.5 (-10.1)</u> Note: <i>Centrocercus sp.</i>		See assessment under Sensitive Species Section				
American bittern <i>Botaurus lentiginosus</i>	Marshes and wetlands; ground nester	Spring/ summer resident, breeding confirmed in the region but not within the UFO	No data	None	Y	N	X		
Bald eagle ¹¹ <i>Haliaeetus leucocephalus</i>	Nests in forested rivers and lakes; winters in upland areas, often with rivers or lakes nearby	Fall/winter resident, no confirmed breeding	+14.3 (+15.2) <u>+14.3</u> (+15.2)		See assessment under Sensitive Species Section				
Ferruginous hawk <i>Buteo regalis</i>	Open, rolling and/or rugged terrain in grasslands and shrubsteppe communities; also grasslands and cultivated fields; nests on cliffs and rocky outcrops	Fall/ winter resident, non-breeding	+2.5 (+4.0) <u>+0.7 (+0.8)</u>		See assessment under Sensitive Species Section				
Golden eagle <i>Aquila chrysaetos</i>	Open country, grasslands, woodlands, and barren areas in hilly or mountainous terrain; nests on rocky outcrops or large trees	Year-round resident, breeding	-1.4 (-0.9) <u>-0.2 (+0.8)</u>	None	Y	Y		X	

BIRDS OF CONSERVATION CONCERN OF THE UFO ¹									
SPECIES	HABITAT DESCRIPTION ²	RANGE/STATUS ^{2, 3}	Populations Trends ⁴	KNOWN ⁵	RANGE ⁶	HABITAT? ⁷	NO EFFECT? ⁸	MAI ⁹	LFL ¹⁰
Peregrine falcon ¹¹ <i>Falco peregrinus</i>	Open country near cliff habitat, often near water such as rivers, lakes, and marshes; nests on ledges or holes on cliff faces and crags	Spring/summer resident, breeding	+1.5 (+6.3) <u>+28.1</u> <u>(+21.7)</u>		See assessment under Sensitive Species Section				
Prairie falcon <i>Falco mexicanus</i>	Open country in mountains, steppe, or prairie; winters in cultivated fields; nests in holes or on ledges on rocky cliffs or embankments	Year-round resident, breeding	+1.7 (+6.3) <u>+3.0 (+2.6)</u>	None	Y	Y		X	
Long-billed curlew <i>Numenius americanus</i>	Lakes and wetlands and adjacent grassland and shrub communities	Spring/ fall migrant, non-breeding	+0.1 (+0.3) <u>-4.4 (-3.5)</u>		See assessment under Sensitive Species Section				
Snowy plover ¹² <i>Charadrius alexandrinus</i>	Sparsely vegetated sand flats associated with pickleweed, greasewood, and saltgrass	Spring migrant, non-breeding	No Data	None	N	N	X		
Mountain plover <i>Charadrius montanus</i>	High plain, cultivated fields, desert scrublands, and sagebrush habitats, often in association with heavy grazing, sometimes in association with prairie dog colonies ; short vegetation	Spring/ fall migrant, non-breeding	-3.4 (-2.5) <u>-1.3 (-0.2)</u>	None	N	N	X		

BIRDS OF CONSERVATION CONCERN OF THE UFO ¹									
SPECIES	HABITAT DESCRIPTION ²	RANGE/STATUS ^{2, 3}	Populations Trends ⁴	KNOWN ⁵	RANGE ⁶	HABITAT? ⁷	NO EFFECT? ⁸	MAI ⁹	LFL ¹⁰
Yellow-billed cuckoo ¹³ <i>Coccyzus americanus</i>	Riparian, deciduous woodlands with dense undergrowth; nests in tall cottonwood and mature willow riparian, moist thickets, orchards, abandoned pastures	Summer resident, breeding	<u>-1.0 (-2.6)</u>		See assessment under Sensitive Species Section				
Flammulated owl <i>Otus flammeolus</i>	Montane forest, usually open and mature conifer forests; prefers ponderosa pine and Jeffrey pine	Summer resident, breeding	No Data	None	Y	N	X		
Burrowing owl <i>Athene cunicularia</i>	Open grasslands and low shrublands often in association with prairie dog colonies; nests in abandoned burrows created by mammals; short vegetation	Summer/ fall resident, breeding	<u>-0.1 (+0.4)</u> <u>-0.9 (-0.6)</u>		See assessment under Sensitive Species Section				
Lewis's woodpecker <i>Melanerpes lewis</i>	Open forest and woodland, often logged or burned, including oak, coniferous forest (often ponderosa), riparian woodland, and orchards, less often in Piñon-juniper	Year-round resident, breeding	<u>-2.0 (-1.4)</u> <u>-0.9 (+0.8)</u>	None	Y	Y		X	
Willow flycatcher ¹² <i>Empidonax traillii</i>	Riparian and moist, shrubby areas; winters in shrubby openings with short vegetation	Summer resident, breeding	<u>-2.6 (-1.8)</u> <u>-3.1 (-2.8)</u>	None	Y	N	X		
Gray vireo <i>Vireo vicinior</i>	Piñon-juniper and open juniper-grassland	Summer resident, breeding	<u>+1.7 (+1.4)</u> <u>+0.6 (+1.6)</u>	None	Y	Y		X	

BIRDS OF CONSERVATION CONCERN OF THE UFO ¹									
SPECIES	HABITAT DESCRIPTION ²	RANGE/STATUS ^{2, 3}	Populations Trends ⁴	KNOWN ⁵	RANGE ⁶	HABITAT? ⁷	NO EFFECT? ⁸	MAI ⁹	LFL ¹⁰
Piñon jay <i>Gymnorhinus cyanocephalus</i>	Piñon-juniper woodland	Year-round resident, breeding	-3.6 (-3.3) <u>-3.0 (-3.4)</u>	None	Y	Y		X	
Juniper titmouse <i>Baeolophus griseus</i>	Piñon-juniper woodlands, especially juniper; nests in tree cavities	Year-round resident, breeding	+0.3 (+1.5) <u>-0.5 (-0.2)</u>	None	Y	Y		X	
Veery <i>Catharus fuscescens</i>	Deciduous forests, riparian, shrubs	Possible summer resident, observed recently in Gunnison County, possible breeding	-4.9 (-7.7) <u>-5.7 (-5.8)</u>	None	Y	Y		X	
Bendire's thrasher <i>Toxostoma bendirei</i>	Desert, especially areas of tall vegetation, cholla cactus, creosote bush and yucca, and in juniper woodland	UFO is outside known range	-4.7 (-4.6)	None	N	N	X		
Grace's warbler <i>Dendroica graciae</i>	Mature coniferous forests	Summer resident, breeding	-1.6 (+1.9) <u>+6.1 (+5.2)</u>	None	Y	N	X		
Brewer's sparrow <i>Spizella breweri</i>	Sagebrush-grass stands; less often in Piñon-juniper woodlands	Summer resident, breeding	-1.7 (-0.1) <u>-2.0 (-1.6)</u>	See assessment under Sensitive Species Section					
Grasshopper sparrow <i>Ammodramus savannarum</i>	Open grasslands and cultivated fields	UFO is outside known range	-1.9 (-8.1) <u>-3.0 (-1.1)</u>	None	N	N	X		
Chestnut-collared longspur <i>Calcarius ornatus</i>	Open grasslands and cultivated fields	Spring migrant, non-breeding	<u>+0.4 (-3.4)</u>	None	Y	N	X		
Black rosy-finch <i>Leucosticte atrata</i>	Open country including mountain meadows, high deserts, valleys, and plains; breeds/ nests in alpine areas near rock piles and cliffs	Winter resident, non-breeding	No Data	None	Y	N	X		

BIRDS OF CONSERVATION CONCERN OF THE UFO ¹									
SPECIES	HABITAT DESCRIPTION ²	RANGE/STATUS ^{2, 3}	Populations Trends ⁴	KNOWN ⁵	RANGE ⁶	HABITAT? ⁷	NO EFFECT? ⁸	MAI ⁹	LFL ¹⁰
Brown-capped rosy-finch <i>Leucosticte australis</i>	Alpine meadows, cliffs, and talus and high-elevation parks and valleys	Summer residents, breeding	No Data	None	Y	N	X		
Cassin's finch <i>Haemorhous cassinii</i>	Open montane coniferous forests; breeds/nests in coniferous forests	Year-round resident, breeding	-0.6 (+0.3) <u>+0.4 (+2.2)</u>	None	Y	N	X		

¹ U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. [Online version available at <<http://www.fws.gov/migratorybirds/>>].

² Cornell Lab of Ornithology. All about birds: bird guide. <<http://www.allaboutbirds.org/guide/>> Accessed 05/15/2009.

³ Status within the UFO. San Juan Institute of Natural and Cultural Resources. Colorado Breeding Bird Atlas. Fort Lewis College, Durango, Colorado. <<http://www.cobreedingbirdatlasii.org/>> Accessed: 05/15/2009.

⁴ Populations trends based on Patuxent Breeding Bird Survey Results for the Southern Rockies Region and Colorado for 1966-2010 (2000-2010). Accessed 10/30/2012 <<http://www.mbr-pwrc.usgs.gov/cgi-bin/atlasa10.pl?S16&2&10>>

⁵ Potential and/or known occurrences in Project Area? Assessment based on UFO files and GIS data, partner data, and local knowledge.

⁶ Project area is within the current known range of the species?

⁷ Project area contains suitable habitat for the species?

⁸ Project activities will have no effect to the species or it's habitat

⁹ Project activities may effect individuals of the species or it's habitat, but not likely to result in a trend toward federal listing

¹⁰ Project activities are likely to result in a trend toward federal listing for the species

¹¹ ESA delisted species.

¹² Non-listed subspecies/ population.

¹³ ESA candidate species.

Appendix E

Summary of Comments from the 30-day Preliminary EA Public Comment Period

Issue	BLM Response
<p>The project needs to be designed for a 100-year flood event and not just a 10-year, 24-hour storm event.</p>	<p>The State of Colorado administers the Storm Water Management Plan and is responsible for the design criteria. From BLM’s perspective the criteria are appropriate and here’s why: If all of the ponds were required to be built to contain the 100 year event, the ponds would be very large and disturb a much larger area than the current mine site. In addition, if a 100 year event were to occur and the ponds overflowed, the likely water quality from them as shown from analysis of the waste rock would be below water quality standards and similar to the flows that would be occurring in all of the nearby stream channels.</p> <p>The pond containing runoff from the ore pad could contain constituents exceeding standards during a 100 year event and therefore is designed to flow back into the mine workings, so no flow leaves the site.</p>
<p>Regarding wetlands, a 50-foot, or better, a 100-foot buffer zone around disturbances should be used instead of the 25-foot buffer zone.</p>	<p>BLM applies wider buffer zones for protection of wetland vegetation around naturally occurring wetlands and riparian areas for other projects. In this particular case, it would be unreasonable to use the wider buffer, because of the nature of these wetlands. Wetlands associated with constructed livestock ponds are subject to repeated disturbance from livestock trampling and pond maintenance activities. With the 25-foot buffer restriction, mine-related disturbance to the wetland will be negligible in comparison to the disturbance they already receive.</p>
<p>The option of installing a bat gate or backfilling the mine portal to close the decline should be a BLM decision and not an operator choice.</p>	<p>As stated in the EA pg. 13, how the portal will be closed is a BLM decision.</p> <p>“If the mine is to be inactive for more than one year, the portal will be closed in a manner sufficient to prevent colonization by bats.</p>

	<p>Closure of the mine opening during reclamation will consist of a “permanent” closure, the design of which will be developed in cooperation with CDRMS and BLM. Temporary and “permanent” closures should be installed in such a manner so as not to entomb any stray bats that may have entered the workings, i.e. using netting that allows exit, but not re-entry during a 24hr period.”</p>
<p>Radon emissions are not quantified and should be in the final EA.</p>	<p>No changes. Radon is a naturally occurring gas produced by the radioactive decay of uranium. Radon dissipates rapidly through time and space, within 1-2 meters from a source and is diluted to the natural concentrations in the outdoor air of about 0.4 pCi/L. (EPA. 2013. http://www.epa.gov/radon)</p>
<p>Water depletion impacts from ore milling and disposal to fish species need to be addressed.</p>	<p>The comment is outside the scope of this analysis. It is not a guarantee that the ore mined at this facility would go to mills within the Colorado River Basin. Given that the Pinyon Ridge mill is not approved it would be speculative at best to analyze impacts to the endangered Colorado River fish for a facility that does not exist and may never exist given fluctuating ore prices.</p>
<p>Cumulative impacts need to be addressed from DOE ULP operations and federal operations as related to the operations of the two mills, White Mesa and Piñon Ridge.</p>	<p>Impact from DOE ULP is adequately addressed in the Cumulative Impacts analysis. It is beyond the scope of this document to analyze impacts from the mills, which receive or would receive ore from mines from within and outside the area, including other states. It is also beyond the scope to analyze impacts from a mill that may or may not ever be approved to be constructed.</p>

Appendix F

Comment letter received during the 30-day public comment period.

INFORM
INFORMATION NETWORK FOR
RESPONSIBLE MINING

PO Box 27
NORWOOD, CO 81423

(970) 497-4482
JENNIFER@INFORMCOLORADO.ORG
WWW.INFORMCOLORADO.ORG



July 16, 2013

Mr. Rob Ernst
Uncompahgre Field Office
2465 South Townsend Avenue Montrose, CO 81403

Via email to: rernst@blm.gov

Re: Comments on Prince Albert Environmental Analysis

Dear Mr. Ernst,

Thank you for the opportunity to provide comments on the Prince Albert EA. As you know, the Prince Albert Mine has been of special interest to INFORM and its members as well as to other regional conservation organizations. I will keep our comments concise because the EA addressed a number of concerns that we raised and identified during the scoping process and, overall, provides a great deal of information about the issues at the Prince Albert. It is important to have a detailed analysis of the Prince Albert, because, despite its small size, the mine is located in a sensitive location above the confluence of the San Miguel and Dolores rivers and raises concerns for its contribution to the cumulative impacts of regional uranium mining activities.

The EA describes a number of required mitigations in the preferred alternative related to exploratory drilling, road development and stormwater management. As the EA notes, the mine's stormwater management features have been engineered to withstand the average 10-year, 24-hour precipitation event. While this is standard management practice, it is important to consider that mines in the Uravan district often remain idle for longer than 10 years, and the Prince Albert is no exception. Over time, mines can and do experience heavy flooding and precipitation events that can facilitate the migration of radioactive and toxic materials into streams. It would be ideal to engineer stormwater management features to meet a 100-year flood event in order to provide the best protections possible for surface waters and habitat.

I am pleased to see that new road improvements will be kept to a minimum and that all drill roads will be fully reclaimed once exploration is completed. This should be a standard requirement from BLM for all mines with the goal of restoring mined lands to their pre-operational condition for public use.

Although there are no delineated wetlands in the project area, it's not impossible, and it is appropriate to address the presence of wetlands in federal project areas. I am pleased to see the BLM require a 25-foot buffer zone between any surface disturbances and wetland areas. However, a more appropriate buffer zone would be a minimum of 50 feet and a truly protective buffer zone would be a minimum of 100 feet. BLM should consider increasing these minimum setbacks at mining and extractive industry sites in the future, even though I agree that the likelihood of this becoming relevant at Prince Albert is small.

The operator is given the choice of how to close the mine portal, either backfilling or installing a bat gate. INFORM encourages the use of bat gates for permanent closures in order to increase the potential habitat for bats, including endangered species, in the future. The final decision ought to leave this option to the discretion of BLM rather than the operator.

The issue of radon emissions (discussed at pages 20-21) are not quantified. The Final EA should attempt to provide more specific information about the amount of radon that will be released at the Prince Albert, regardless of whether the mine is subject to NESPHAPs Subpart B regulation.

The EA confirms that the mining proposal depletes water necessary for the survival and recovery of four listed Colorado River fish, but fails to account for the water that would be depleted during the milling of this uranium ore and disposal of mill tailings at either the Energy Fuels' White Mesa mill or its proposed Piñon Ridge mill (as discussed at pp. 29-30). The EA confirms that the proposal "may effect" fish species listed under the Endangered Species Act, but does not demonstrate that BLM has satisfied its consultation duties under Section 7 of the Endangered Species Act in light of the connected actions and cumulative impacts involving federal uranium mining.

Cumulative impacts of mining and milling, along with other BLM-managed and DOE-leased uranium projects on public lands, are significant and must be analyzed in an Environmental Impact Statement as well as via consultation with the U.S. Fish and Wildlife Service. In the Prince Albert EA, BLM relied on the program-level consultation from 2009 that did not examine the DOE attempt to stimulate uranium mining in the region by expanding its leasing program into the Uravan Mineral Belt or the licensing of the Piñon Ridge mill, which would be built to mill ore mined primarily from federal lands. Without an ore supply from federal lands, both White Mesa and Piñon Ridge lack independent utility, and are therefore connected actions.

DOE released the PEIS for the Uranium Leasing Program in April. Comments submitted to DOE by the plaintiff conservation groups (including INFORM) are attached here for your reference.

Although BLM has not yet responded in full to the FOIA request filed by conservation groups, including INFORM, in March 2013, documents obtained via FOIA confirm that DOE is engaged in ongoing, formal Section 7 consultation on the federal uranium complex in the Uravan Mineral Belt due to water depletions from the mining and milling of uranium from federal lands that resulted in a "likely to adversely affect" finding. INFORM reserves the right to make additional comments on this project based on review of agency records after they are released pursuant to the March 2013 FOIA requests.

I am also pleased to see the winter closure for surface disturbances in order to protect big game species included in the preferred alternative as well as the May 15 to July 15 closure to protect migratory bird species. Many of the habitat concerns at the Prince Albert are typical for mines located on the mesa areas in the Uravan Mineral Belt, and the BLM should routinely implement these seasonal closures as mitigation requirements.

Thank you for considering our comments and providing the analysis of the Prince Albert Mine. I would like to apologize again for submitting them past the deadline and appreciate your understanding.

Sincerely,

A handwritten signature in cursive script that reads "Jennifer Thurston".

Jennifer Thurston
Director
INFORM