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State of Utah

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December 29, 1998

TO: File

THRU: Joe Helfrich, Permit Supervisor *JH*

FROM: Paul Baker, Reclamation Biologist *PB*

RE: Box Canyon Subsidence, Canyon Fuel Company, LLC, SUFCO Mine, ACT/041/002-98D, Folder #2, Sevier County, Utah

SUMMARY:

Canyon Fuel Company is proposing to conduct full extraction mining beneath a perennial stream in Box Canyon. The Box Canyon area are several significant archaeological sites, and there is concern about the water supply to the creek and the effects disruption of the hydrologic balance could have on wildlife and riparian vegetation.

There are no proposed changes to Chapter 1 or some other sections, including revegetation and postmining land use; therefore, these sections were not reviewed.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

VEGETATION RESOURCE INFORMATION

Regulatory Reference: R645-301-321

Analysis:

The current mining and reclamation plan has general information about the vegetation in the Box Canyon area. The current application contains a report that discusses potential effects of subsidence on riparian vegetation, but there is no quantitative information. This issue is discussed under R645-301-332.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of

this section of the regulations.

HISTORIC AND ARCHAEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: R645-301-411.140

Analysis:

The application includes a copy of a cultural resource survey report. There are thirteen recorded cultural resource sites in the Box Canyon area, and nine of these have been recommended as being eligible or potentially eligible for listing in the National Register of Historic Places. The applicant currently has approval to mine under four of these nine sites although the current mining and reclamation plan does not include this approval. The application includes information intended to correct this problem.

The application contains copies of letters between SHPO, the Forest Service, and the consultant that did the cultural resources surveys documenting approval from SHPO and the Forest Service to undermine and possibly destroy some of the sites. Some sites were, with approval, excavated in 1997. The Division has a letter on file from the Forest Service archaeologist, Stan McDonald, notifying the Advisory Council on Historic Preservation of these actions and indicating it was unnecessary to receive approval from the Council. The correspondence and other information included in the application satisfies the requirements of R645-301-411.140 for the area already approved to be mined.

There remain five significant or potentially significant sites that could be affected by subsidence. The cultural resources report does not evaluate the possible effects on these sites, and the Agapito report only briefly mentions the possibility of damage to three of the sites. Therefore, it is impossible for the Division to make a recommendation to SHPO whether there could be adverse effects.

The Forest Service is evaluating the potential effects on the remaining sites in conjunction with the environmental impact statement for the Pines Canyon Tract. The application needs to include evidence of coordination efforts with SHPO and show what protection or mitigation plan will be implemented.

The cultural resources report and the Agapito report have been marked confidential. The Division needs to ensure this information does not become available to the public.

Findings:

Information provided in the proposal is not considered adequate to meet the requirements of this section of the regulations. Prior to approval, the applicant must provide the following in accordance with:

R645-301-411.140, The application needs to show coordination efforts that have been undertaken with the State Historic Preservation Officer (SHPO). It is understood the Forest Service and SHPO are working to develop a protection and mitigation plan.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: R645-301-322

Analysis:

Wildlife Information

There are no known raptor nests in the area that would be undermined in Box Canyon.

The application includes a survey for bats done in Box Canyon and in some adjacent areas. Spotted bats were heard in some areas of lower Box Canyon but not in the area that would be subsided. Townsend's big-eared bats were not seen or recorded. These two species are classified by the Forest Service as sensitive. Several other bat species were recorded, but no maternal roosting sites or hibernacula were identified in the permit area.

The survey was done in early October 1997. This is a transitional time for most bat species when they could still be foraging or when they could be starting to hibernate. Since bats were mist-netted and recorded with the ANABAT, it is assumed most were still active.

The bat study did not consider hibernacula. To do so would necessitate a winter survey. However, it is extremely difficult to search for hibernacula, and, while some adverse effects on the local population of bats are possible, they are likely to be small. Therefore, additional bat survey work is not required.

Threatened or Endangered Species

According to information in the existing mining and reclamation plan, there are no known occurrences of threatened or endangered species in the permit area; however, the Pines Tract Draft Environmental Impact Statement discusses listed threatened, endangered, and sensitive species that could occur in the area or could be affected by mining. Of these, those that could be affected are four listed species of the Upper Colorado River basin, northern goshawks, spotted bats, northern three-toed woodpeckers, flammulated owls, and the Link Trail columbine. The most likely to be adversely affected is the Link Trail columbine since it grows in seeps and riparian areas.

The application needs to contain further baseline information about species and habitats of special concern. It should discuss or show on maps where these species occur in relation to

the proposed mining operations.

Findings:

Information provided in the proposal is not considered adequate to meet the requirements of this section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

R645-301-322.200, The application needs to contain baseline information about species and habitats of special concern, including a discussion or maps showing where these species occur in relation to the proposed mining operations.

OPERATION PLAN

FISH AND WILDLIFE PROTECTION AND SUBSIDENCE CONTROL

Regulatory Reference: R645-301-330

Analysis:

The application includes studies of the hydrology and riparian vegetation of the Box Canyon area and analyses of potential effects of mining the area. With the current mining schedule, subsidence is likely between about May and August 1999. It is possible there will be some interception of ground and surface water flows, but the exact effects are not known. According to the Mayo and Associates report in the application, any disruption will probably be temporary, and large cracks under the creek in Box Canyon could be repaired. Although flow in part of the creek could be interrupted, inflow from springs on the sides of the canyon should provide at least some water downstream.

The most critical time for the survival of most plants in Utah is the active growing period of late spring to early summer. Disruption of the water supply at this time would be most detrimental to the riparian vegetation in Box Canyon, and this is the time when the area is planned to be subsided.

The applicant currently has a plan for monitoring the effects of subsidence on vegetation through taking color infrared photos every five years. This is not adequate for monitoring the riparian vegetation in Box Canyon. All riparian areas are considered critical wildlife habitat, and Box Canyon is unique among stream corridors in the vicinity.

The applicant needs to establish a quantitative vegetation monitoring program that will be adequately sensitive to detect changes in vegetative cover and species composition. Baseline sampling should be done before the area is mined with subsequent sampling done for at least two

years after mining. Best results would be obtained by establishing photopoints and permanent transects that could be checked each time. This requirement is being made after consultation with other agencies, and it is supported by R645-301-322.100, R645-301-322.220, and R645-301-333.

Direct adverse effects to wildlife are highly unlikely since no surface disturbance is proposed and there are no raptor nests above the proposed addition to the permit area. The most likely effect would be a disruption of water supply to the creek in Box Canyon. The Draft Environmental Impact State for the Pines Canyon Tract indicates the Link Trail columbine, a sensitive species, is likely to be adversely affected. Although the application contains a discussion on potential effects to the hydrologic balance, it needs to also discuss how this could affect the Link Trail columbine and other species, particularly those that depend on the riparian area or water resources.

The consultants that did the bat survey suggested that subsidence could affect roosting areas and that some individuals could be lost; however, they felt new cracks would offset the ones destroyed and that there would be little net effect. They believe there could be some impact on local populations of spotted bats. The report says if subsidence occurred in spring and summer it might cause reproductive females to carry young to another less favorable roost site. In the winter, torpid bats might not have time to arouse and escape during subsidence.

Subsidence could occur in these areas as a general lowering of the topography or it could cause sudden failure of some rock features. Bats would likely either be unaffected or would not have time to fly away to escape subsidence.

From the information in the report, the Division draws the following conclusions:

- There are bats, including spotted bats, present in the general area although spotted bats may not be present in the upper part of Box Canyon.
- There are no known hibernacula, maternal roosting sites, or other areas of heavy concentration in the area that would be subsided.
- Cracks in rocks being used by bats could fail and kill or trap any animals using them, but since there are no known concentration areas, it is unlikely this would seriously reduce the local population. Generally, rock crevices and defective trees are used by only a few bats rather than large populations.
- It is possible that new habitat could be created, but this is also unlikely.

For these reasons, there should be no need to mitigate possible effects on bats or to do further monitoring.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section of the regulations. Prior to approval, the applicant must provide the following in accordance with:

R645-301-330, The application needs to discuss potential effects of the proposed mining operation on threatened, endangered, and sensitive species, particularly those that could be affected by disruption of the hydrologic balance.

R645-301-332, The applicant needs to propose a plan for quantitatively monitoring the effects of subsidence on the riparian vegetation in Box Canyon.

AIR QUALITY

Regulatory Reference: R645-301-420

Analysis:

The applicant proposes an increase in production above what is allowed in the existing Air Quality Approval Order, and the application for the Link Canyon Substation amendment says a notice has been filed with the Division of Air Quality to increase the amount of production allowed.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

RECLAMATION PLAN

LAND USE RECLAMATION PLAN

Regulatory Reference: R645-301-412

Analysis:

No changes to the postmining land use are proposed, and the reclamation plan appears to be in compliance with the Forest Service management plan.

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Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

RECOMMENDATIONS:

The application should not be approved until the applicant has corrected the deficiencies outlined in this review.

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