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State of Utah

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TO: File

THROUGH: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist *PAB*

DATE: December 6, 1993

RE: Exploration Project, Southern Utah Fuel Company, Convulsion Canyon Mine, Folder #2, ACT/041/002, Sevier County, Utah

SUMMARY

SUFCo has proposed to drill fourteen exploratory holes over a three year period. They would drill four in 1994 and five each in 1995 and 1996.

Concerns addressed in this review include revegetation methods and timing of drilling operations compared to crucial periods for wildlife. The exploration will be conducted on Forest Service land, and Bob Thompson of the Forest Service has told me that he will be doing a clearance for threatened or endangered plants. The exploration will require the use of 0.15 acre feet of surface water. Therefore, a consultation will need to be performed with the Fish and Wildlife Service because a depletion of Green and Colorado River water leads to a "may affect" determination for endangered fish of these rivers. This consultation should be performed by the Forest Service.

Comments in this memorandum are according to Division requirements and recommendations. The Forest Service may have additional requirements that will need to be met.

ANALYSIS

R645-202-231

Important Habitats

Proposal:

The amendment says that a raptor survey will be performed in the spring of 1994 and the new information will be used to ensure that drilling does not disturb nesting sites. Drilling operations will not occur within 1500 feet of known nesting sites. It also says that the

performance standards in Section 3.5 will be followed during drill site and wheel track reclamation.

SUFCo plans to use about 0.15 acre feet of water from the North Fork of Quitcupah Creek for the drilling operation.

Analysis:

The mining and reclamation plan says that there are no threatened or endangered species in the permit area. Although the report containing this statement was written several years ago, it is probably still true. To cover more current information, Bob Thompson of the Forest Service will be conducting a clearance for threatened, endangered, and sensitive species.

The Division of Wildlife Resources (DWR) stated in correspondence to the Division dated October 7, 1993, that sites 94-24-1, 94-13-1, 94-17-1, 94-17-2, 94-17-3, 94-20-1, 94-16-1, and 94-21-1 are in critical big game summer range. After visiting the sites, I believe that only two of these, 94-24-1 and 94-13-1, actually contain habitat components for elk calving and deer fawning areas. However, unless there is an important need to disturb any of the sites before July 5, SUFCo should commit to not conduct exploration operations at any of these sites between April 15 and July 5. If there is an urgent need to drill within this period, a DWR biologist should be contacted to look at the site and determine if it has necessary habitat components for critical big game summer range.

The rest of the sites are within deer winter range and critical elk winter range. SUFCo should commit to not conduct drilling operations at these sites between December 1 and April 15 to not disturb animals during this crucial period. I do not believe that there are any plans to drill during this period. The Forest Service may require that there not be any drilling after November 1 rather than December 1.

Although the plan says that there are no known raptor nests within 1500 feet of where drilling would be performed, a ½ mile radius is recommended for no disturbance, including road construction, during raptor nesting season. The crucial times are February 1 to July 15 for eagles and February 1 to July 30 for goshawks. The crucial period for most other raptors generally ends about the middle to end of July. If active raptor nests are found, SUFCo needs to commit to maintain a ½ mile radius buffer zone of no disturbance until after the crucial nesting period is over.

All of the sites except 94-13-1 and 94-24-1 are within two miles of a sage grouse lek. None of the sites near the lek should be disturbed between March 15 and June 30.

Combining all of the time restrictions given above, the crucial periods for each site are:

Drill Site	Crucial Period
94-24-1	4/15 - 7/5
94-13-1	4/15 - 7/5
94-17-1	3/15 - 7/5
94-17-2	3/15 - 7/5
94-17-3	3/15 - 7/5
94-20-1	3/15 - 7/5
94-16-1	3/15 - 7/5
94-21-1	3/15 - 7/5
94-22-1	12/1 - 6/30
94-22-2	12/1 - 6/30
94-28-1	12/1 - 6/30
94-33-1	12/1 - 6/30
94-27-2	12/1 - 6/30
94-34-1	12/1 - 6/30

The crucial periods at some sites could be extended if there are active raptor nests within ½ mile.

Any use of surface water in the drainage area of the upper Colorado River constitutes a "may affect" situation for the endangered fish of the Colorado River. The agency preparing NEPA documentation needs to consult with the Fish and Wildlife Service about the use and mitigation. The mitigation should be a small one-time fee.

Deficiencies:

1. SUFCo needs to commit to not conduct exploration activities in critical wildlife habitat areas during crucial periods.
2. Because any use of surface water that would otherwise drain into the upper Colorado River is considered to constitute a "may affect" situation for endangered fish of the Colorado River, the agency preparing NEPA documentation for this project will need to consult with the Fish and Wildlife Service and SUFCo will need to mitigate for the loss of the water.

R645-202-232

Roads

Proposal:

Some drill sites will be accessed using existing wheel tracks, and a few will require that

roads be built off of Forest Service roads or existing wheel tracks. SUFCo will not salvage soil from wheel tracks, but they will be reclaimed by scarifying the soil prior to reseeding.

Analysis:

SUFCo proposes to access site 94-24-1 across a riparian area adjacent to the South Fork of Quitchupah Creek. R645-301-358, cited in R645-202-232, says that the operator conducting coal mining and reclamation operations must avoid disturbances to, enhance where practicable, restore, or replace, wetlands and riparian vegetation along rivers and streams and bordering ponds and lakes. The soils in the riparian area near site 94-24-1 are saturated within a few inches of the surface as evidenced by the proximity of the stream and the type of vegetation. Saturated soils become compacted very quickly when they are driven over, and it is expected that the vegetation would be badly damaged. Rather than having these types of problems immediately adjacent to a stream, it is recommended that SUFCo either grade a road on the adjacent sagebrush area or change the drilling location to an area on the north side of the stream discussed during a September 8, 1993, site visit.

If SUFCo chooses to not follow this recommendation, the plan should contain further details about the access road and how it will be restored. Simple scarifying and seeding which is planned for wheel tracks would not be appropriate for this area. Minimally, a riparian species seed mix should be developed rather than using the mix in the plan which is for sagebrush/pinyon-juniper areas.

Deficiencies:

1. SUFCo needs to show compliance with R645-301-358.400 for the access to site 94-24-1. It is recommended that the riparian area not be used for access to this site and that either an alternate site be chosen or that the road be cut across the adjacent sagebrush area. If this recommendation is not followed, SUFCo needs to provide further details on how the riparian area is to be protected and restored.

R645-202-233

Soil Salvaging

Proposal:

The amendment says that where topsoil and subsoil are removed for drill site construction, the methods described in Section 2.3.1.1 will be followed. Wheel tracks will be considered a minor disturbance, so no soil will be salvaged. The soil in wheel tracks will be scarified prior to reseeding. Stockpiled soil will not be vegetated but will be surrounded by a silt fence.

Analysis:

The soil survey in the plan does not include samples from the areas where the exploration would occur, and descriptions of the soils that, according to the map, should occur in the exploration areas do not fit the conditions found in the September site visit. Therefore, it is unknown how deep the various horizons and the topsoil are.

Section 2.3.1.1 of the plan states that soil will be removed in two lifts where possible to segregate the A and B and C horizons. Where the topsoil thickness is less than six inches, the topsoil and underlying unconsolidated material will be removed and stockpiled together.

Judging from the conditions found in the September visit, the soils vary in thickness from a few inches to several feet. Several sites in sagebrush vegetation types have very deep soil profiles that show little or no horizon differentiation. Without a specific commitment in the plan and without any indication in the field of how deep the topsoil is, an equipment operator would probably have difficulty knowing how deep to strip the soil.

Unless the horizons are differentiated well enough that it is clear how much topsoil is present, SUFCo should commit to salvage a specific depth of soil. This depth should be at least 12 inches or until consolidated rock is encountered. It is also recommended that someone with experience in soil taxonomy be present when the soil is being salvaged.

Where it is necessary to grade roads to the sites, it is recommended that the topsoil materials be pushed into a berm along the outside edge of the road. To protect the soil from erosion, various methods could be used. These include sloping the road and thus directing runoff away from the berm, installing silt fences at areas of potential erosion, and using water bars or ditches to direct water away from the berm.

Deficiencies:

1. SUFCo needs to provide greater detail on how much soil will be salvaged. Where the topsoil depth is not readily discernible and where the soil survey does not provide adequate information to determine topsoil depth, the plan needs to contain a specific commitment to salvage at least 12 inches of soil or all of the soil to consolidated material, whichever is less.
2. The plan needs to provide greater detail on how soil will be salvaged from constructed roads and subsequently protected. Pushing the soil into a berm on the side of the road and diverting water away from the berm are suggested.

Proposal:

The performance standards in Section 3.5 of the existing plan will be followed during reclamation.

Analysis:

It is understood that only the seed mix would be used for reclamation and that there would be no transplants. Mountain big sagebrush (*Artemisia tridentata* var. *vaseyana*) needs to be included in the seed mix unless transplants are going to be used. This species is important for sage grouse. Also, SUFCo should specify "whitestem" rubber rabbitbrush. This variety is much more palatable to wildlife than some of the more widespread varieties but seed is usually available at a reasonable cost. These requirements are felt to be within the definition of "best technology currently available" to enhance wildlife habitat.

The reclamation plan for the portals area says that transplants will be used to establish many of the shrubs. Unless shrubs are to be transplanted in the exploration areas, some additional shrubs should be included in the seed mixture. Also, the vegetation at some sites is different from what is at the portals, so some other species should be included. Other substitutions and deletions are recommended because of the differences in conditions on the plateau compared to the mine site. The Division makes the following recommendations for inclusion in the mix:

Species	Rate (pounds PLS/acre)
Kentucky Bluegrass (<i>Poa pratensis</i>)	1
Snowberry (<i>Symphoricarpos oreophilus</i>)	1
Curleaf Mountain Mahogany (<i>Cercocarpus ledifolius</i>)	1

Other recommendations are:

1. Substitute Rocky Mountain penstemon (*Penstemon strictus*) for Palmer penstemon.
2. Substitute Pacific aster (*Aster chilensis*) for blue leaf aster.
3. Delete corymb buckwheat (*Eriogonum corymbosum*). This species grows near the mine but is not common on the plateau.

The plan says that wood fiber would be applied hydraulically as mulch. Although this method is acceptable, straw or hay is recommended instead. Crimped straw or hay has been shown to provide better erosion protection, and the Division's experience has been that seedling survival is enhanced by using straw or hay compared to wood fiber mulch. However, if straw or hay is used, it will need to be certified noxious weed free as required by the Forest Service.

Other than the standards for the seed mix and reclamation methods, the only standard for revegetation success in the exploration regulations is that the vegetative cover must be adequate to control erosion. This is a standard that must also be achieved for mine site bond release, but the current plan does not contain a method for judging if the standard has been met. SUFCo needs to propose a method that can be used to judge reclamation success for the areas disturbed for the exploration. It is suggested that the Division be contacted about what methods would be acceptable.

Deficiencies:

1. SUFCo needs to include mountain big sagebrush in the seed mix unless it is to be planted from transplants. "Whitestem" rubber rabbitbrush is more palatable to wildlife than other subspecies and needs to be specified for the reclamation seed mix for the exploration sites. This could be done without a specific commitment in the plan, but a commitment is desirable. Other changes to the seed mix and to the mulching plan are recommended.
2. The exploration plan needs to include methods for judging revegetation success which is considered to be vegetation capable of stabilizing the soil surface from erosion.

RECOMMENDATIONS

Prior to approval, the deficiencies outlined in this memorandum need to be adequately addressed. Of particular concern are the timing requirements for not disturbing wildlife during crucial periods. However, these requirements are not expected to overly restrict the exploration activities.

Several changes to the seed mixture are suggested which would provide species better adapted to the conditions on the plateau compared to the mine site. Sagebrush is important for sage grouse and needs to be included in the seed mixture unless SUFCo intends to plant transplants.

The plan needs to contain more detailed commitments on salvaging topsoil since it does not appear that the soil horizons are well differentiated at several sites.