



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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TO: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist

DATE: August 3, 1992

RE: Mid-Term Permit Review, Valley Camp of Utah, Belina Complex, Folder #2, ACT/0007/001, Carbon County, Utah

SUMMARY

The biology and land use and air quality sections of the above-referenced plan have been reviewed. The concerns expressed in Lynn Kunzler's review memorandum have mostly been satisfied, but there are other issues that have been raised in consultation with the Division of Wildlife Resources, in correspondence from the Forest Service, in examining the test plot results, and simply in reviewing the plan.

ANALYSIS

R645-301-321

Vegetation Information

Proposal:

There are six vegetation types in the area. The most extensive, spruce-fir, has very little understory forage production. Production in other areas varies up to about 1375 pounds per acre. Total cover ranges between 38% and 165%.

Analysis:

The methods that were used to evaluate vegetation are not approved for determining revegetation success, and the information is difficult to evaluate because of the methods that were used. The plan contains well-organized summaries of the material, however.

The vegetation reference areas were not sampled for cover. The plan states that during years 4 and 5, 1991 and 1992, monitoring of the test plots will include sampling of appropriate reference areas to provide a comparison to demonstrate revegetation

success. The reference areas at Valley Camp are only generally located on the map, and it is the Operator's preference not to firmly establish them until final reclamation commences. This is allowable under the regulations, but, for the purpose of establishing that reclamation is feasible, sites that probably contain the same vegetation as was disturbed need to be evaluated to compare with the test plots and/or interim reclamation areas. The Division will work with the Operator to choose these sites and to evaluate them or to have them evaluated.

Deficiencies:

None.

R645-301-322

Wildlife Information

Proposal:

The plan contains results of macroinvertebrate studies of Eccles and Mud Creeks conducted in the late 1970's and early 1980's. The report concludes that there appears to be a trend in these communities toward more tolerant assemblages of species:

Eccles Creek is classified by the Division of Wildlife Resources (DWR) as a class III fishery with natural reproduction.

Bird surveys consisted of visual observations along a one kilometer strip along Whisky Canyon and Eccles Canyon, and near the mine portals and other disturbances. Two active raptor nests were found in Eccles Canyon, one of a goshawk and one of a Cooper's hawk. Golden eagles were seen during the survey, but no nests were found. No other uncommon birds were found.

The plan contains low level studies of other species, including brief descriptions of their life histories and of important habitat for these species. No specific sites are identified which are critical habitat for any of these species although the plan states that they probably exist within the project area.

Analysis:

The plan does not contain raptor nesting information for most of the permit area that could be subjected to subsidence. Any nests need to be protected or, if areas where they exist are to be subjected to subsidence, appropriate monitoring and mitigation measures need to be taken. As per R645-301-322.100, this requirement is being made after consultation with Bill Bates of Wildlife Resources.

Deficiencies:

1. The plan must include a commitment to survey for raptor nests in areas that contain nesting habitat at least one year prior to mining that could cause subsidence in these locations.

R645-301-330

Operation Plan

Proposal:

The plan refers to R614-301-341.100 and R614-301-341.200 for interim reclamation techniques.

On page 77, the plan outlines aquatic monitoring programs for Eccles Creek, Mud Creek, and James Canyon Creek. Other streams in the area are identified as being intermittent, not directly affected by the Belina Project and not requiring a monitoring or protection plan.

Mine personnel will be made aware of the presence and value to society of bald eagles and other endangered or important species. Roost trees will be reported to DWR and the Fish and Wildlife Service. Design and construction of all electric power lines and other transmission facilities will be in accordance with raptor protection guidelines.

Efforts will be made to avoid unnecessary disturbances on big game high priority and high value ranges, and these areas will be protected from exploration activities during these important periods.

Page 79 contains a list of 12 other specific items to protect wildlife.

A presubsidence survey within or adjacent to the Valley Camp permit area has demonstrated that areas for agricultural or silvicultural production of food and fiber and grazing lands are of such low production that they can be classified as non-renewable resource lands. The label of non-renewable resource land applied to the agricultural portion of the definition and not to aquifers and areas for the recharge of aquifers or silvicultural production. Forest land is classified as a renewable resource.

Analysis:

Language on page 80 of Chapter 3 concerning renewable resource lands needs to be clarified. Based on the information provided, it appears that all of the permit area can be classified as renewable resource land based on the "aquifers and areas for

recharge of aquifers" portion of the definition of renewable resource lands. As stated in the plan, all Forest Service lands are renewable resource lands. Contrary to the first statement in the first paragraph, however, areas used for grazing and silvicultural production are not of such low production that they should not be classified as renewable resource lands with the possible exception of, depending on its silvicultural value, the spruce-fir vegetation type. The definition of "renewable resource lands" contained in R645-100-200 includes all grazing lands regardless of productivity.

The natural gas pipelines are owned and operated by Questar Pipeline Company and Mountain Fuel Supply Company. The plan needs to be revised to give the correct information.

R645-301-525.231 requires that material damage to surface lands resulting from subsidence be corrected to the extent technologically and economically feasible by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses which it was capable of supporting before the subsidence. R645-301-332 requires that the plan show how impacts to renewable resource lands will be mitigated. 1990 correspondence from the Forest Service states that the operator must provide provisions for monitoring subsidence cracks and sink holes, and reclamation in the event that they are determined to be unsafe and cause unacceptable resource damage. The plan states that a subsidence monitoring plan will be derived with the assistance and approval of the Division, but there are no provisions for a mitigation plan for the effects of subsidence that the Forest Service correspondence discusses. This mitigation plan would need to include monitoring of raptor nests in areas that are about to subside during nesting periods.

After consulting with the Division of Wildlife Resources, it was decided that future biological aquatic resource monitoring should be performed in Eccles Creek above and below the confluence with Whisky Creek. Having two sampling points will show whether there are differences in the aquatic community above compared to below the confluence and should indicate whether changes in the community are the result of Valley Camp's activities. Valley Camp must work with the Division of Wildlife Resources to establish these monitoring stations.

Federal coal lease stipulations require that the Operator implement a vegetation community monitoring program to evaluate the effects of mining, particularly subsidence, on vegetation. The plan needs to discuss how this monitoring is to be performed and at what time intervals. Correspondence from the Forest Service states that the time interval must not exceed five years. The use of color infrared photography is recommended. Other potential methods include on-the-ground surveys, black and white photographs, and using satellite technology.

Deficiencies:

1. Language concerning whether or not the permit area contains renewable resource lands must be clarified. Using the information contained in the plan, it appears that the entire permit area contains renewable resource lands based on the portion of the definition dealing with aquifers. With the possible exception of spruce-fir vegetation types, the permit area also contains renewable resource lands based on the agricultural (grazing) portion of the definition.
2. Correct ownership information must be given for the natural gas pipeline.
3. The plan must contain a mitigation plan for surface effects of subsidence.
4. Valley Camp must work with the Division and the Division of Wildlife Resources to establish biological aquatic resource sampling points in Eccles Creek above and below the confluence with Whisky Creek.
5. The plan must contain a program for monitoring the effects of mining on vegetation communities to comply with federal coal lease stipulations and Forest Service requirements.

R645-301-341.100

Revegetation Timing

Proposal:

Chapter 3 states that the entire area of disturbance will be hydroseeded then mulched during the late fall following the complete abandonment and earth work. Seedlings will be planted in the spring following seeding.

Chapter 2 page 23 states that vegetation-supporting material redistribution will begin as soon as ground conditions allow in the spring followed immediately by seedbed preparation, fertilization if required, planting, and mulching.

Analysis:

The statements in Chapter 2 imply that seeding will be performed in the spring which is inconsistent with the statements in Chapters 3 and 5. Spring planting is not generally recommended for Utah, but, minimally, the plan must be consistent.

Deficiencies:

1. Revegetation timing plans must be consistent within the plan. Fall seeding is recommended.

R645-301-341.210

**Species and Quantities of
Seeds and Seedlings**

Proposal:

The plan presents seed and planting mixes for the Valcam Loadout, southwest-facing slopes, northeast-facing slopes, and riparian areas.

Analysis:

The seed and planting mixes are diverse and would normally be considered to be adequate. The test plots showed little woody species establishment, however. Some seedling planting is proposed for the Belina Mine site and for riparian areas but no seedlings are shown in the Valcam Loadout seed mixture. Except for the riparian areas, all shrub establishment is expected to be from seeds. The Operator needs to discuss this problem and propose methods to establish woody species that did not grow in the test plots, such as serviceberry, rabbitbrush, mountain snowberry, and Wood's rose. Planting and protecting shrub seedlings is a possible option.

The plan needs to show or discuss where the riparian area planting mix will be used. Obviously, it would be used along water courses, but the plan needs to show approximately what areas, i.e. how far from the stream, would be planted. Although the Operator has stated that he thought that this information was contained in the plan, I have not been able to locate it in Chapter 3 or 7.

A representative of the Operator (Steve Tanner) has told me that it is the Operator's intention to use plant materials originating near the site for revegetation. As understood, some seed would be gathered and grown for transplants. Seed for seeding would be gathered from the site as much as possible with the remainder purchased from traditional commercial sources but with origins as near this area as possible. These are very desirable commitments but need to be incorporated into the plan. The Soil Conservation Service in "Plant Materials for Use on Surface-Mined Lands in Arid and Semiarid Regions" states, "Selection of the proper ecotype or cultivar of an improved plant is as important as species selection." In order to establish a diverse, permanent and effective vegetative cover as required by the regulations, adapted ecotypes and varieties need to be used.

Deficiencies:

1. Unless evaluation of interim reclamation sites shows adequate shrub establishment, the plan must propose methods for establishing a greater variety and larger number of shrubs than grew in the test plots.
2. The plan must show or discuss where the riparian area planting mix will be used.
3. The plan must show how adapted ecotypes and varieties will be obtained.

R645-301-341.220 Planting and Seeding Techniques

Proposal:

Page 83 of Chapter 3 states that the entire area of disturbance will be hydroseeded. Page 87 says that slopes between 10h:1v and 1.5h:1v will be seeded by hand-broadcasting the seed, and seed will be covered by hand raking or by some other means.

The plan states that after grading, all downed trees, brush, etc. adjacent to the disturbed area shall be placed upon the recontoured surface. Areas of additional disturbance will be minimized as far as possible, but where additional disturbance is required, an attempt will be made to relocate the vegetation as clumps on the area to be reclaimed. All areas to be revegetated will be ripped to a minimum depth of fourteen inches. Maximizing roughness of the surface will be paramount.

Analysis:

Both hydroseeding and hand broadcasting seed are acceptable methods of planting seed, and it is recommended that broadcast seed be put in better contact with the soil through raking or a similar means. However, if some hand broadcasting is to be performed, the plan should not say that the entire area will be hydroseeded. Slopes less steep than 10h:1v should be raked like the slopes between 10h:1v and 1.5h:1v.

The earth moving section on page 82 contains some very good commitments on attempting to salvage brush and trees and moving islands of vegetation rather than simply stripping them away. Both of these methods should increase the chances for revegetation success while providing habitat for small animals and increasing the diversity of plants on the reclaimed site. Maximizing roughness, as the plan states, is very important. A few of the slopes shown on the reclamation cross sections are about 1h:1v, and it may not be possible to rip slopes this steep.

Deficiencies:

1. Wording of the plan must be revised so that seeding plans do not conflict. If seed is to be hand broadcast in some areas, the plan must not state that the entire area will be hydroseeded.
2. Seed that is broadcast on slopes accessible to personnel, anticipated to be those slopes less steep than 1.5h:1v, must be put in better contact with the soil through raking or another similar means.

R645-301-341.230

Mulching Techniques

Proposal:

Hydromulch techniques will be used to apply a minimum of 2000 lbs. per acre of wood fiber mulch with 60 pounds of tackifier per ton of mulch on all disturbed areas. Page 87 says that the rate of wood fiber mulch application will be 2000-3000 pounds per acre. Also on page 87, the plan states that slopes between 10h:1v to 3h:1v will be mulched using straw or other organic material and that slopes steeper than 3h:1v will require a hydromulch and/or pinned hemp matting.

Analysis:

As with the planting and seeding methods section, the mulching methods proposed must be consistent within the plan. One section states that hydromulch will be applied on all areas at the rate of 2000 lbs. per acre, and other sections discuss using different rates and types of mulch. This does not mean that a precise rate and method of mulching must be specified for each area, just that the plan needs to be consistent.

R645-301-742.100 requires that the best technology currently available must be used to minimize erosion to the extent possible and to prevent, to the extent possible, additional contributions of sediment to runoff or stream flow outside the permit area. Mulching is included in this regulation as a sediment control technology. Different mulching methods were used in some of the original interim revegetation plots, but the plan does not contain analysis of the effectiveness of these techniques either for establishing vegetation or for erosion control. Wood fiber mulch does not appear to be the best technology currently available for controlling erosion in conjunction with establishing vegetation; however, since straw and hay might attract wildlife and livestock to newly-seeded and -transplanted areas, hydromulch may be the best option for this site. Forest Service and other literature recommendations indicate that the best mulching technologies currently available to be for controlling erosion in conjunction with

revegetation efforts, not taking into account the potential impacts of wildlife and livestock, may be using 1.5-2 tons per acre of straw or hay mulch; or using straw, coconut, or wood fiber blanket materials. Straw or hay could be anchored to the soil using either crimping, a tackifier, or plastic netting.

Deficiencies:

1. The discussion of mulching techniques must be consistent within the plan. The plan must not state that hydromulch will be used in the entire area but also show other methods and rates that would be used.
2. The mulching plan must include the best technology currently available for erosion control in association with revegetation.

R645-301-341.240

Irrigation and Pest Control

Proposal:

Irrigation is not envisioned as part of the reclamation as the average precipitation should promote germination and adequate growth for all species planted.

Analysis:

It is recommended that the plan include provisions for irrigating transplants in case of drought.

The plan states that since seedlings will be transplanted in the spring, there will be some growth of forbs and grasses that were planted the previous fall so the seedlings will not be eaten too badly. It is unlikely that if transplanting is performed in the spring the grasses and forbs will be growing enough that they will provide forage and protection for the transplants. It is not known how serious the potential wildlife degradation problem might be, so the transplants should be monitored very closely to determine if this will be a problem. If it is, some protection may need to be provided.

Musk thistle is a problem in the area and will probably invade reclaimed areas quickly if adequate control is not performed. Noxious weeds which infest the reclaimed areas will need to be controlled.

Deficiencies:

None.

R645-301-341.250 Revegetation Success Determination

Proposal:

Statistically acceptable techniques will be used to determine percent cover and composition of disturbed areas. Revegetation analyses and study of erosion pins will be conducted annually for at least the first five years. Where success is apparent as represented by achievement of 90% of the original cover during the five year period, subsequent analyses will be at five year intervals. Any areas not achieving 90% of the original cover during the first five years should be reevaluated and another attempt made to revegetate those areas. Transplant survival will be monitored for the first three years. Statistically adequate data will be collected for cover, productivity, and woody plant density for both reclaimed areas and vegetation reference areas during the last two years of the liability period.

Analysis:

This discussion is a little confusing because the Operator claims 5 years to be the liability period yet the monitoring plan proposes that areas showing successful revegetation will be monitored at five year intervals after the first five years. It is assumed that areas with successful revegetation efforts after five years will not need to be monitored further.

R645-301-356.231 requires that, after consulting with appropriate state land and wildlife management agencies, the Division establish a minimum tree and shrub density standard for areas that are proposed to be used for wildlife habitat after reclamation. Establishing a woody species density standard is difficult without baseline information, and the plan does not include baseline woody species density information. It is anticipated that reference area data or information from sites near the mine will be gathered this year, so the standard for success will be established when the baseline information is available.

Deficiencies:

None.

R645-301-341.300 Revegetation Feasibility Demonstration

Proposal:

The plan contains some evaluations of interim revegetation sites and of test plots established in 1987. Annual reports since 1987 also contain some test plot monitoring information. The test plots are to be monitored for the last time in 1992 at which time comparisons would be made with the reference areas.

Analysis:

As discussed under the vegetation information section, the Operator does not have firmly established vegetation reference areas and prefers not to establish them until final reclamation commences. Without some evaluation of undisturbed areas using accepted methods, however, it is impossible to determine if the test plots have shown revegetation feasibility. The Division will work with the Operator to evaluate or have evaluated undisturbed areas which appear to represent the vegetation communities that were present before the sites were disturbed. Interim reclamation sites will also be checked to see if they indicate that revegetation is feasible.

Deficiencies:

None.

R645-301-342

Fish and Wildlife

Proposal:

The plan refers to the operation plan for wildlife habitat enhancement. The operation plan says that wildlife habitat will be enhanced at the time of reclamation through restoration of habitat features and selection of reclamation materials that will improve the quality and/or quantity of forage and/or cover and through reclaiming riparian habitat to the pre-mine status.

Analysis:

The performance standard of R645-301-358 requires that the Operator use the best technology currently available to achieve enhancement of fish, wildlife, and related environmental values where practicable. Although the plan includes enhancement measures included in the rules, other enhancement opportunities may be available. The plan does not state how wildlife habitat will be enhanced during reclamation compared to the condition before any mining. The practice of using available dead trees and brush as part of the planting medium preparation could be considered wildlife habitat enhancement if done properly. Consultation with the Division of Wildlife Resources to determine if other habitat enhancement measures are practicable or needed for this area.

Deficiencies:

1. Valley Camp must determine if other wildlife habitat enhancement measures that use the best technology currently available are practicable for the postmining phase of operations. Consultation with the Division of Wildlife Resources to determine what measures are needed is highly recommended.

R645-301-411 Land Use Environmental Description

Proposal:

The historic land use at the Belina Mine site, the haul road, the general office areas and 60% of the Valcam loadout is rangeland. The remaining 40% of the loadout has historically been used for mining. Land capability and productivity information is contained in soils and biology sections of the application.

All of the permit area in Carbon County is zoned for recreation, forestry and mining except Section 9; T13S, R7E SW1/4 which is zoned Critical Environmental (CE-1) back to RF&M is being prepared. All of the permit area in Emery County is zoned for recreation, forestry, and mining, but rezoning to Critical Environmental is being considered in certain sections.

The plan contains a cultural and historic resources survey conducted in 1980 by AERC. In the AERC report, one site, identified as 381N/1 which is the Utah No. 1 Mine, is classified as meeting criterion "d" of 36 CFR 60.6 which is one of the criteria for eligibility for listing in the National Register of Historic Places.

The plan contains a discussion of the mining history of the area which includes dates of mining, methods used, and approximate production quantities. Map R614-301-521.111 shows the approximate extent of underground workings.

Analysis:

Chapter 3 discusses wildlife use of the area, but Chapter 4 does not identify wildlife as a premining land use. The regulations require that the uses of the area preceding any mining be identified. Although mining was conducted historically at the site of the Valcam Loadout, the plan needs to state what the land use was prior to any mining.

The last sentence in the paragraph under the "Carbon County" heading on page 3 needs to be rewritten. It is assumed that this statement means that rezoning of Section

9; T13S, R7E SW1/4 from CE-1 to RF&M is being considered.

The Operator has stated that the Utah No. 1 Mine has not been and will not be disturbed. If this site is to be disturbed in the future, coordination must first be made with the Division of State History.

Deficiencies:

1. The wildlife premining land use must be identified in Chapter 4. Land use prior to any mining on the areas of the Valcam Loadout that have been historically used for mining must be identified.
2. The last sentence in the paragraph under the "Carbon County" heading on page 3 needs to be rewritten. If rezoning of this area has occurred, the information contained in the plan should be updated.

R645-301-412

Reclamation Plan

Proposal:

General and detailed descriptions of the reclamation are contained in Chapters 3 and 5. These sections show most of the land being reclaimed to wildlife and grazing land uses. The office is not to be reclaimed but would be used for educational and/or recreational purposes. Page 96 of Chapter 7 indicates that the general office and accompanying property will be donated to the Alpine School District or another beneficiary. Some variance from approximate original contour is shown.

Analysis:

Leaving the office for educational and/or recreational purposes is probably a feasible land use, but the plan needs to discuss the use in association with the criteria for an alternative postmining land use. It also needs to discuss how the land use will be achieved and any necessary support activities associated with it. Specifically, the plan needs to show that the Alpine School District or another beneficiary has agreed to accept and maintain the building and grounds.

Where the plan proposes a variance from approximate original contour, the requirements of R645-302-270 must be met, including complying with the alternative postmining land use regulations.

The plan must contain comments from legal or equitable owners of record of the

surface of the permit area and Utah and local government agencies which would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation. It must also state the consideration which has been given to making all of the coal mining and reclamation operations consistent with surface owner plans and applicable Utah and local land use plans and regulations.

Deficiencies:

1. The plans for leaving the office for recreational and/or educational purposes must be discussed in light of the requirements for an alternative postmining land use and the requirements of R645-301-412.110.
2. Where the plan proposes a variance from approximate original contour, the requirements of R645-302-270 must be met.
3. The plan must contain comments from legal or equitable owners of record of the surface of the permit area and Utah and local government agencies which would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation. It must also state the consideration which has been given to making all of the coal mining and reclamation operations consistent with surface owner plans and applicable Utah and local land use plans and regulations.

R645-301-420

Air Quality

Proposal:

The plan states that the Valley Camp air pollution control plan has been approved by the State of Utah Bureau of Air Quality. The plan also includes a 4-point fugitive dust control plan.

Analysis:

The Operator is in compliance with this regulation.

Deficiencies:

None.

RECOMMENDATIONS

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August 3, 1992
ACT/007/001

Although the plan contains some deficiencies and inconsistencies, few appear to be serious. Because the plan does not contain raptor nesting information, the potential for taking a raptor nest is not known. The plan must include the best technology currently available for enhancing wildlife habitat after mining has ceased. The land use section of the plan needs to contain comments from land owners concerning the postmining land use, and alternative land use regulations need to be addressed for some areas.