



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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October 31, 1997

TO: File

THRU: Joe Helfrich, Permit Supervisor *JK for Joe Helfrich*

FROM: Susan White, Senior Reclamation Biologist *SW*

RE: Culvert Extension - Round 2, Horizon Coal Corporation, Horizon Mine, ACT/007/020-97D, Folder #2, Carbon County, Utah

## SUMMARY:

A permit change application was received September 18, 1997 from Horizon Coal Company requesting a 100 foot extension of the existing culvert which contains Jewkes Creek. The Division responded to this application with deficiencies and the Operator responded October 17, 1997. This current memo reviews the October 17, 1997 submittal. The application did not adequately address the vegetative success standards of the wet meadow/wetlands/riparian community as previously directed and therefore should not be approved. Sections of this Technical Analysis have been taken from the Technical Analysis for the current approved permit.

## TECHNICAL ANALYSIS:

## **ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR Sec. 783., et. al.

## **VEGETATION RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 783.19; R645-301-320.

### **Analysis:**

The Horizon permit area covers eight vegetative communities (page 9-2). The Oakbrush and Salina Wildrye communities combined make up over half the total acreage of the

eight communities (Plate 9-1). The proposed new disturbance will be on areas that have been previously impacted by coal mining activities. Various degrees of mining-related impacts have occurred on the vegetation within the proposed disturbance. Therefore, the communities have been designated as: 1) slightly disturbed (altered) drainage bottoms; 2) moderately disturbed areas; 3) severely disturbed areas; and 4) wet meadow/wetlands/riparian. Prior to disturbance, the drainages were probably dominated by sagebrush/grass/rabbitbrush communities with aspen, Oakbrush and fir in the deeper and more protected drainages. The slopes surrounding the drainages and valleys are now dominated by Oakbrush and Salina wildrye communities (page 9-12). No map or description was provided in the original permit or permit application 97D which delineates the location of the vegetation communities within or adjacent to the disturbed area boundary.

The total living cover for all areas, excluding the wet meadow, was 48 percent. The most prevalent species in total cover and frequency was rubber rabbitbrush which comprised 22 percent of the total cover. Other dominant species included Salina wildrye, cheatgrass, big sagebrush, and mutton grass.

The Soil Conservation Service estimates that premining forage production rates were 950 lbs per acre for the sagebrush/grass/rabbitbrush communities, 900 lbs per acre for the Oakbrush/salina wildrye communities and 1500 lbs per acre for the semi-wet meadow (page 9-9).

In the course of a wetlands determination site visit in August 1995, Rick Smith, of the Engineering Planning Group determined that a wetland exists at the proposed site of the sediment pond. A map of the wetlands was prepared by Rick Smith and is shown in Appendix 9-2. The wetland/riparian area is approximately .42 acres in size (page 9-7). Further study and delineation was to be done as part of an application for approval to alter the wetland which was made to the U.S. Army Corps of Engineers (page 9-6). After looking at soil samples from the wetland the Army wanted the Division of Water Rights to visit the site and make a wetlands determination. Water Rights determined that the area was a riparian area and not considered a wetland. This statement should be qualified and restated that the area is not an Army Corp jurisdictional wetlands. Riparian areas are considered to be a type of wetlands. Appendix 9-2, Surveyed Riparian Area delineates the disturbed area boundary with the 1995 Rick Smith survey of potential wetlands and the 1996 Patrick Collins wet meadow community study.

In the summer of 1996, Patrick Collins, Mt. Nebo Scientific, Inc., quantitatively sampled the wetland for the purposes of establishing a bond release standard. Dr. Collins describes the area as a riparian/wet meadow with 71 percent vegetative cover. The study area included the wet, mesic and dryer vegetation of the meadow area (Appendix 9-2, page 2). The cover in the area was dominated by grass and grasslike species with perennial ryegrass

comprising 21 percent of the cover. Native perennial species were present in the sampled wet meadow such as redbud, bluegrass long style rush, horsetail and sandbar willow. However, other species present reveal that the area is disturbed and in poor condition such as thistle, poverty weed, and perennial ryegrass.

**Findings:**

Information provided in the plan meets the minimum requirements of this section.

## **OPERATION PLAN**

### **FISH AND WILDLIFE INFORMATION**

**Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.**

**Analysis:**

**Protection and Enhancement Plan.**

The Permittees discussion on minimizing potential impact to fish and wildlife from the mining operation is on page 3-34 and 3-35. The first impact is loss of habitat and since the area is small the impact should be minimal. The previously disturbed area has mostly revegetated and provides food, shelter and cover to resident wildlife. The DWR estimates that 327 acres of critical deer winter range will be lost due to increased traffic along the haul route (county road).

The Permittee states that to minimize adverse impacts to the fish and wildlife of the area an employee awareness program will be initiated to reduce wildlife harassment and road kills. The Permittee recognizes the potential for big game kill through the Wildlife Management Area (page 10-35) and has committed to controlled speed limits. Horizon has committed to monitoring road kills and reporting numbers weekly to the DWR; and agrees to remove killed deer and elk from the road between the Wildcat Coal Loadout and the mine site.

A wildlife monitoring program is to be conducted throughout the operation life of the mine by an environmental specialist (page 3-37), as required by the Division.

A mitigation and enhancement plan for the operations phase of mining is to establish a riparian vegetation community along the lower portion of Jewkes Creek. This portion of the creek, below the sediment pond was relocated after a storm event in 1997. Developing a

riparian community below the mine may help reduce wind blown fines from entering Gordon Creek.

**Findings:**

Information regarding this section was found to meet the minimum regulatory requirements of this section.

## **RECLAMATION PLAN**

### **REVEGETATION**

**Regulatory Reference:** 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

**Analysis:**

**Standards for Success.**

As previously stated all, if not most, of the entire operational area has been previously disturbed by mining and not reclaimed to the requirements of the Utah Coal Mining rules. Therefore, the revegetation success standard for bond release is that the vegetative ground cover will be not less than the ground cover existing before redisturbance and adequate to control erosion.

Several vegetative studies have been conducted within the area of the proposed disturbance. Two studies, 1991 and 1995, are presented and included in Appendix 9-1 of the application to use as a bond release standard for the Portal Canyon area of the disturbance. Total vegetative cover averaged 48 and 55 percent cover in 1991 and 1995, respectively. Perennial, nonweedy cover averaged 45 and 49 percent vegetative cover in 1991 and 1995, respectively. Unpaired, nonparametric comparisons of two samples based on rank showed that the 1991 and 1995 nonweedy, perennial cover was not significantly different; however, the 1991 and 1995 total cover were significantly different. Two sample comparisons using the normal distribution showed no significant difference in either total or perennial cover. Raw data is presented in Appendix 9-1.

The locations of the transects are illustrated on Plate 9-1. Transects B and D are shown as going outside of the disturbed area. Original photographs of the transects indicate that

the transects are actually within the disturbed area and this is acceptable to the Division.

The Permittee proposes to use the 1995 baseline study as the standard for success for all areas except the wet meadow/wetland/riparian area. Since the 1991 and 1995 nonweedy, perennial cover was not significantly different then this success standard is acceptable to the Division. Page 9-8 also commits to the same diversity of shrubs, forbs, and grasses as the 1995 study. A commitment is made for the 80/60 tree and shrub standard rule, although this is not required for a prelaw site. However, this commitment will ensure that the postmining land use standard is being met.

Another study to establish baseline data was conducted in the wetland/wet meadow/riparian area in 1996 (Appendix 9-2). Total living cover was 71%, which will be considered the success standard for bond release. Other standards to be met are diverse, effective and permanent vegetative cover which are compatible with the postmining land use. Therefore, the plant species established along Jewkes Creek wet meadow area will have to have wetland characteristic to be considered successful.

The Operator commits to meeting the reclamation standards of the riparian/wet meadow/wetland as shown on map Appendix 9-2 within an area of .42 acres. The area shown by the Collins survey and which the standard is based is approximately 2 acres. The area of exact responsibility to meet the success standard for the riparian/wet meadow/wetland area must be clearly defined.

A typical cross section of the reclaimed channel for Jewkes Creek shown in Figure 7-12 and provides for a 8 foot wide channel and a 30 foot wide flood plain. Check dams will be placed in the reclaimed channel in several locations (Plate 3-7) to encourage upstream sediment to be deposited in the channel. The sedimentation in the channel from the check dams and low flow gradient hopefully will provide the necessary hydrology and soil conditions to reestablish the wet meadow vegetation.

The period of intended responsibility will be ten years. Vegetation will be quantitatively measured in years 2, 3, 5, 9, and 10 following revegetation (page 9-10).

This is a previously-mined site and although some areas are considered severely disturbed, the Permittee has committed to clean and remove the old spoil material from the site. Some areas were less severely impacted and the topsoil has remained in place with minimal surface disturbance. Adequate topsoil will be salvaged from these areas to use on the more severely impacted areas. The proposed mine site is located in a canyon bottom at approximately 7600 feet elevation with average annual precipitation between 16 and 20 inches. All of these factors, along with the revegetation efforts, should allow the Permittee to meet and exceed the

performance standards in all areas except for the wet meadow/riparian area.

**Findings:**

The permit does not meet the minimum regulatory requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

**R645-301-356**, the area which is required to meet the vegetation success standard for the riparian/wet meadow/wetland is not clearly represented in the text or map, Appendix 9-2 in Chapter 9. The text and/or map must be revised to clearly define the success standard for this vegetation community.

**RECOMMENDATION**

Prior to approval the requirement of R645-301-356 must be provided as outlined above.