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State of Utah
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DIVISION OF OIL, GAS AND MINING

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TO: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist *PAB*

RE: Draft Review, Reclamation of Upper Portion of Number 4 Mine Canyon, Castle Gate Mine, Amax Coal Company, ACT/007/004-94G, Working File, Carbon County, Utah #2

SYNOPSIS

The referenced amendment does not generally concern biology, but it contains a statement about revegetation standards for success that needs to be removed or modified. All reclaimed areas except roads and areas covered by water must have a revegetation standard for success.

ANALYSIS

R645-301-341.250 Revegetation Success Standards

Analysis:

On November 18, 1994, the Division received an amendment proposing to cover the exposed coal seam in the No. 4 Mine canyon in Hardscrabble Canyon. The amendment contains the following statement:

Although the slopes will be seeded and mulched along with the adjacent reclaimed areas, establishment of the vegetation is not expected (nor is it necessary) to meet the standards delineated in Chapter 9.

The slopes to which this statement refers would be steeper than 2h:1v and would be covered primarily with rock.

R645-301-353 requires that the permittee establish on regraded areas and on all other disturbed areas, except water areas and surface areas of roads that are approved as part of the postmining land use, a vegetative cover that is in accordance with the approved permit and reclamation plan. The area in question is not a road and is not a water area; therefore, Amax must establish vegetation in accordance with the approved plan.



The approved revegetation success standards in Chapter 9 for previously disturbed areas are:

1. The reestablished vegetation must be adequate to control erosion. (R645-301-356.250)
2. Diversity, seasonal characteristics, permanence, and utility for the postmining land use will be measured by comparing reclaimed areas to specified reference areas using the Motyka Index. The Motyka Index will be calculated using absolute cover. The index standard for comparison between the reclaimed and reference areas will be the percent similarity calculated between samples within the reference area, or 70%, whichever is less. (R645-301-353 and R645-301-356.100)

It may be very difficult to establish vegetation on very steep or rocky areas. However, these areas must still be included in bond release vegetation sampling. Since adjacent, undisturbed areas also contain steep slopes and escarpments with little or no vegetation on them, it would be appropriate for the permittee to propose a separate revegetation standard for success for comparable reclaimed areas. In this scenario, the standard might be very low, but there would still be a standard.

Under the current mining and reclamation plan, vegetative cover on very steep slopes would need to be averaged with the cover in other areas for comparison with the reference area. Because the areal extent of very steep slopes is relatively small, including measurements of vegetative cover from these areas with measurements from other areas would not decrease the average very much. This is a previously mined area where R645-301-356.250 applies, and the standard for success is not vegetative cover itself. The standards are erosion control, utility for the postmining land use, diversity, and the other requirements of R645-301-353. It is unlikely that averaging vegetative cover measurements from very steep areas with measurements from other areas would adversely affect the comparison.

Findings:

Amax needs to modify or remove the statement on pages 3.3-24 and 25 of the amendment to the reclamation plan for Hardscrabble Canyon that indicates vegetation establishment is not expected or necessary in some areas to meet the standards in Chapter 9 of the mining and reclamation plan.

RECOMMENDATIONS

Except water areas and surface areas of roads that are approved as part of the

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postmining land use, vegetation must be established on all areas in accordance with the approved mining and reclamation plan. The statement on pages 3.3-24 and 25 of this amendment indicating that it is not expected or necessary to establish vegetation on certain slopes steeper than 2h:1v needs to be modified or removed.