

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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September 29, 2006

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TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor  
Wayne H. Western, Team Lead *WHW*

FROM: Priscilla Burton, Environmental Scientist III, Soils *PWB by an*

RE: Phase II Bond Release, Arch Western Bituminous Group, LLC., Gordon Creek 2, 7, & 8 Mines, C/007/0016, Task ID #2591

## SUMMARY:

The Bond Release Directive Tech-006 (dated September 5, 2000) and Utah Regulation R645-301-880.320 governs Phase II bond release. The stated requirements are establishment of vegetation and sediment control, and the establishment of pre-mining yields on prime farmland. (The latter requirement is not applicable to this site.)

The disturbed area was 43.88 acres. The portion requested for Phase II bond release is 32.52 acres. (This excludes the 2.36 acres associated with the sediment ponds and the Sweets pond site.) The Phase I bond release documentation established that the topsoil and grading of the site was according to plan. See Priscilla Burton's technical memo dated January 16, 2003.

## TECHNICAL ANALYSIS:

## 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.

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**Revegetation: General Requirements**

The Phase II bond release application (Task 2384) includes a report of vegetative cover, diversity and woody plant density, dated September 2003. This report begins with a list of seeded species that does not match the list provided in Table 3-3 of the MRP. (Bromus carinatus and Poa pratensis were listed as seeded in the MRP, but were not in the vegetation report's seed mixture. Also the vegetation report indicates that Chrysothamnus nauseosus was in the seed mix, but it is not listed in Table 3-3 Permanent Reclamation Seed mix. Since Bromus carinatus and Poa pratensis show up in the reclaimed site with 10-20% frequency, they probably were in the seed mix. Chrysothamnus is encountered less than 5% of the time.)

During the bond release inspection, Chris Hansen noted that the site had been seeded in stages as the reclamation was accomplished and then on separate occasions when additional work was warranted. Perhaps differing seed mixes were used on these occasions.

**Revegetation: Standards For Success**

The reclaimed site does not yet approach the reference area in woody plant density requirements. The 2003 vegetation analysis reports the reclaimed woody plant density values are 266 plants/acre and the reference area woody plant density is 2,225 plants/acre. The vegetation analysis also indicates that "by far the dominant plant species" in the reclaimed area is alfalfa, one of eight forbs planted at the site. The high incidence of this forb at the reclaim site contrasts with the reference area where forbs represent only 3.4% of the total living cover. At the reference area, shrubs and grasses provide a combined 96.6% of the total living cover.

The vegetative performance standards of the Utah Coal Mining Rules state that the vegetative cover will be "comprised of species native to the area, or of introduced species where desirable and necessary to achieve the approved postmining land use and approved by the Division." (R645-301-353.120). In this case, the use of alfalfa was approved by the Division, although probably not required to achieve the approved postmining land use of wildlife and grazing.

**Findings:**

**The Division should verify the seed mix used.** Otherwise, the information provided meets the requirements for Phase II bond release.

**STABILIZATION OF SURFACE AREAS**

**Analysis:**

Cover at the reclaim site was found to be 64.2% as compared with the 51.88% cover at the Mountain Brush/Grass Reference Area. I attended a formal bond release inspection on September 28, 2006. The site appeared much as it had during the Phase I bond release inspection three years before. Vegetation is well established. There was no evidence of erosion. Livestock were grazing the site and had trod a well-worn path to access the ponds and spring.

The series of three ponds at the lower end of the site were observed. The first pond in the sequence is accessible to livestock. It held mud. The second two ponds were dry.

**Findings:**

The information in this section of the approved Mining and Reclamation Plan is adequate to meet the requirements of this Section of the regulations.

**RECOMMENDATIONS:**

Although alfalfa is a very palatable for grazing and browsing animals, it should be discouraged or at least minimized in future seed mixes at this elevation, since it persists and is a non-native species.

Phase II bond release is recommended for this site.