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State of Utah

Department of
Natural Resources

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November 15, 2004

Chuck Semborski, Environmental Supervisor
Energy West Mining Company
P.O. Box 310
Huntington, Utah 84528

Re: Update Appendix XIV, Energy West Mining Company, Des Bee Dove Mine, C/015/0017, Task ID # 2046, Outgoing File

Dear Mr. Semborski:

The above-referenced amendment has been approved. A copy of our Technical Analysis is enclosed for your information. A stamped incorporated copy of your application is also enclosed for your copy of the MRP.

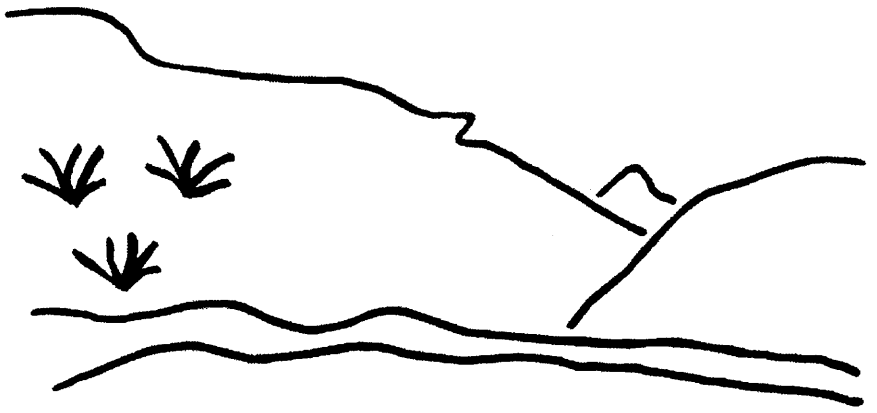
If you have any questions, please call me at (801) 538-5268 or Jim Smith at (801) 538-5262.

Sincerely,

Pamela Grubaugh-Littig
Permit Supervisor

PWB:an
Enclosure
cc: Price Field Office
O:\015017.DBD\FINAL\TA_2046.DOC

State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Des-Bee-Dove
Update Appendix XIV
C/015/0017, Task # 2046
Technical Analysis
November 12, 2004

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TECHNICAL ANALYSIS

The Division ensures compliance with the Surface Mining Control and Reclamation Act of 1977(SMCRA). When mines submit a Permit Application Package or an amendment to their Mining and Reclamation Plan, the Division reviews the proposal for conformance to the R645-Coal Mining Rules. This Technical Analysis is such a review. Regardless of these analyses, the permittee must comply with the minimum regulatory requirements as established by SMCRA.

Readers of this document must be aware that the regulatory requirements are included by reference. A complete and current copy of these regulations and a copy of the Technical Analysis and Findings Review Guide can be found at http://ogm.utah.gov/coal

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

TECHNICAL ANALYSIS

INTRODUCTION

PacifiCorp, through their subsidiary Energy West Mining Company, reclaimed the Des-Bee-Dove mine site. Regrading and contouring were completed in June 2003. The reclamation plan originally included leaving a strip of vegetation between the reclaimed bathhouse pad and the canyon bottom.

However, after reclamation construction began, the Permittee, the Division, and the contractor agreed that the entire slope below the bathhouse should be excavated as a source of fill, substitute topsoil and riprap. This change added 0.6 acres to the disturbed area between stations 3+00 and 7+00 (Plate 500-3, Appendix XV).Working from the top of the slope to the canyon bottom, the slope was recontoured. This was Change Order #2 Appendix B in Volume XIVof the Des Bee Dove MRP.

Because the RUSLE calculations are very responsive to the slope length parameter, the change in the configuration of the slope below the bathhouse required a recalculation for that area. Energy West's submittal (received October 5, 2004) contains a 3.5-inch floppy disk with new RUSLE 1.6 calculations for all profiles shown on Drawing CS1854D, a revised Table 2 (page 3) of Appendix B, and a revised Drawing CS1854D that shows the location of profile A3-2D. The information provided indicates that the expected sediment yield from the reclaimed site will be a maximum of 0.02 tons/acre. This is comparable to the undisturbed area.

As built drawings showing the area seeded will be provided to the Division with the Phase I Bond Release application.

INTRODUCTION

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

The Permittee randomly sampled the bathhouse pad outslope on April 9, 2003, between Station 5+00 and 7+00 for pH, EC and SAR before using any of the material as substitute topsoil (see April 15, 2003 field visit report in M: files/coal/2003/internal/0033.pdf). Intermountain Laboratories/Sheridan analyzed the samples for pH, Electrical Conductivity, and Sodium Adsorption Ratio. The analytical report is included in Change Order #2 of Appendix XV of the MRP. The SAR values reported for the soil are between 3.42 and 5.68 units. These SAR values are within reason for the permeability class used in developing the K factor for the bathhouse disturbed area soils (see discussion of the Revised Universal Soil Loss Equation in Reclamation Plan – Stabilization of Surface Areas).

Findings:

The information provided meets the requirements of Reclamation Plan, Topsoil and Subsoil.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

Hydrologic Reclamation Plan

Sediment control measures

Contouring, pocking, and vegetation are the methods that have been used to keep sediment in place on reclaimed surfaces. Weed-free alfalfa hay was incorporated into the soil at a rate of 2,000 lbs/acre (R645-301-341). Surfaces were roughened by pocking or deep gouging to retain sediment and moisture and to mix the straw mulch into the upper portion of the soil. Hydroseeded areas received wood-fiber mulch. A soil tackifier was applied to protect against

erosion until vegetation becomes established (R645-301-244). Rock litter on the surface will also aid in sediment control, enhance vegetation establishment, create microhabitats, and help provide a natural aesthetic appearance (R645-301-244). If erosion is identified during routine monitoring or monitoring after precipitation events, silt fence will be installed and, if needed, the surface will be enhanced and reseeded (R645-301-728).

The reclamation plan originally left a strip of vegetation between the reclaimed bathhouse pad and the canyon bottom. However, after reclamation construction began, the Permittee, the Division, and the contractor agreed that the entire slope below the bathhouse should be excavated and recontoured, working from the top of the slope to the canyon bottom (Change Order #2). This change increased the surface disturbance by 0.6 acre, but:

- Reduced the slope from 1.3:1 to 1.9:1;
- Increased slope stability;
- Increased substitute topsoil was made available for cover;
- Improved safety and efficiency of the work environment; and
- Improved reclamation techniques could be used.

In the approved reclamation plan, estimates of A (annual soil loss) and SY (sediment yield) for the reclaimed areas had been done using RUSLE 1.06. Because the RUSLE calculations are very responsive to LS, the slope length parameter, the change in the configuration of the slope below the bathhouse required a recalculation for profile A3-2D.

Energy West's submittal contains a 3.5-inch floppy disk with the new calculations, and Table 2 (page 3) of Appendix B has been updated. Drawing CS1854D shows the location of profile A3-2D. Elevation contours on Drawing CS1854D are pre-construction estimates (this map should be updated with as-built elevation contours if a new aerial survey is flown over this area.)

A slope length of 502 feet - measured horizontally - and a gradient of 47.3% were used by Energy West to recalculate A and Y for profile A3-2D: other parameters remained the same as in the previous calculation. (See the TA C/015/017-AM01D-2 dated December 19, 2002 for a discussion of the soil erodibility factor, K.)

Energy West	Gradient (%)	Horizontal slope length (ft)	Ground cover (%)	A (tons/acre/year)	SY (tons/acre/year)
A3-2D - old	45	165	64	0.05	0
A3-2D - new	47.3	502	64	0.24	0.02
Undisturbed areas	57 to 92	70 to 260	55	0.05	0.05

The contours and profile length shown on Drawing CS1854D indicate a gradient of approximately 50%, the reclamation plan calls for a maximum slope of 1.9H:1V (Change Order #2), or 50% for this slope, and a gradient of 45% was used in the old calculation. The Division ran RUSLE using a 50% slope for A3-2D, and again with a 50% slope and ground cover reduced from 64% to 55%, the value used in RUSLE calculations for the undisturbed slopes. The Division's RUSLE calculation using the slightly steeper gradient with less cover yields a higher estimate for A, which is to be expected, but the same value for Y. The values Energy West calculated, A = 0.24 tons/acre/year and SY = 0.02 tons/acre/year, seem to be reasonable approximations of soil loss and sediment yield.

Division	Gradient (%)	Horizontal slope length (ft)	Ground cover (%)	A (tons/acre/year)	SY (tons/acre/year)
A3-2D	50	502	64	0.26	0.02
A3-2D	50	502	55	0.32	0.02

Findings:

Hydrologic information in the submittal meets the requirements of the Coal Mining Rules.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

As a result of Change Order #2 (Tab in Appendix XV of the MRP), the areas seeded varied from the Proposed Seeded Area shown on Dwg 300-1. As built drawings showing the area seeded will be provided to the Division with the Phase I Bond Release application.

Between stations 3+00 and 7+00, the final slope configuration was reduced from 1.3H:1V to 1.9H:1V (Tab 2, Change Order 2, App XV).

The Revised Universal Soil Loss Equation (RUSLE) was used to calculate the average annual soil loss from the disturbed area. The parameters entered into the program are described in Table 2 Annual predicted soil loss from the disturbed area (page 3, App B of App XIV and electronically on a disc). Slope Profiles are illustrated on Dwg CS1854D.

Slope lengths are measured from the edge of the reclaimed area to the drainage or to a level area of the reclaimed site. Slope lengths in the Des Bee Dove reclaimed site range from 100 - 502 ft and gradients range from 33.7 to 69%. The maximum annual soil loss shown in

Table 2 for the Des Bee Dove reclaimed site is 0.24 Tons/acre. Control practices (P) reduce this loss to 0.02 Tons/acre, which is comparable to the surrounding undisturbed ground (Table 1, Appendix B, Vol XIV).

Findings:

The information provided meets the requirements of Reclamation Plan, Topsoil and Subsoil.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Final Surface Configuration Maps

Drawing CS1854D has been redrawn to show that profile A3-2D now extends from the top of the reclaimed bathhouse pad to the reclaimed channel. A registered professional engineer certified the map and it appears to be correct.

Elevation contours on Drawing CS1854D are pre-construction estimates. This map should be updated with as-built elevation contours if a new aerial survey is flown over this area.

Findings:

Maps, plans and cross sections of reclamation operations meet the requirements of the Coal Mining Rules.