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ACT/015/017
#2

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

Ron Worth
Texaco Exploration and Producing Inc.
PO Box 2100
Denver, Colorado
12/11/96

RE: DES-BEE-DOVE HAUL ROAD RECLAMATION AND INTERIM REVEGETATION

INTRODUCTION

Texaco was granted a right of way along the Des-Bee-Dove haul road. The right of way was granted by the Utah State Trust Lands. This right of way overlaps an existing right of way granted to Energy West Mining Company. The Energy West Mining Company right of way is regulated by the Division of Oil, Gas, and Mining(DOGM).

The Division of Oil, Gas, and Mining granted a permit for the Des-Bee-Dove Mines and ancillary properties. The Des-Bee-Dove haul road is a part of this permit. Permit stipulations required Energy West Mining Company to construct and maintain appropriate drainage controls along the Des-Bee-Dove haul road. Appropriate drainage controls consist of drainage ditches, culverts, riprap, and interim revegetation. These controls have been installed and maintained since the completion of roadway construction in 1983.

Texaco has started to excavate a trench along a portion of the haul road. The trench will be used for gas and water lines that service wells in the area. Trench excavation has and will disturb existing ditches previously constructed by Energy West Mining Company. Excavation work conducted by Texaco along the Des-Bee haul road has caused Energy West to fall out of compliance with the requirements of the DOGM permit. The disturbed area along the Des-Bee haul road within the Energy West Mining permit boundary has to be reestablished by Texaco to DOGM approved standards.

SCOPE OF WORK

In order for Energy West to comply with the requirements of the DOGM permit, Texaco will have to reestablish all disturbed areas within the permit boundaries to the same condition as they were before excavation started. This will entail reconstructing the drainage ditch along the haul road and establishing interim revegetation on the disturbed area accordance with the Des-Bee-Dove permit. Interim revegetation is required to provide erosion control until final reclamation is completed.

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Ditch Reconstruction

Disturbed ditch lines will be reconstructed according to criteria established in drawing 5-1- Sheet No. 2. Typical Drawing No. 2 indicates design criteria for the section of the Des-Bee-Dove haul road in question. Drawing 5-1 - Sheet No. 6 and Sheet No.7 indicate structures that were in place prior to Texaco excavation. Drawing 1-1 indicates the permit area that has been disturbed.

Energy West recommends that trenches be backfilled and compacted in a manner similar to that shown in the Trench Backfill drawing. If the trench is not backfilled and compacted properly, subsidence could occur in the trench. DOGM permit guidelines require that any deterioration of the ditch line must be repaired. Energy West Mining Company will hold Texaco responsible for any deterioration that occurs in the disturbed area for a period of 18 months.

Interim Revegetation

Upon completion of the ditch reconstruction, DOGM permit criteria require interim revegetation to occur. Interim revegetation requirements are outlined beginning on page 4-67 of the attached information. Approximately 3.5 acres have been disturbed in the area. Applying the interim seed mix (page 4-66) will require the following amounts of seed:

COMMON NAME	EQUIVALENT PLS (Pure Live Seed)
Grasses	
Thickspike Wheatgrass	7.0 lbs.
Crested Wheatgrass	3.5
Western Wheatgrass	10.5
Intermediate Wheatgrass	10.5
Smooth brome grass	7.0
Indian Ricegrass	7.0
Forbes	
Pacific Aster	0.7 lbs.
Utah vetch	3.5
Yellow Sweetclover	7.0
Alfalfa	5.24
Eaton Pentstemon	1.04
Total	70.35 lbs.

The following fertilizer application will be required for 3.5 acres:

Ammonium nitrate	140 lbs.
Triple Superphosphate	122.5 lbs

Interim seed mix can be obtained from Stevenson Intermountain in Ephraim, Utah. Their telephone number is 801-283-6639.

Maintenance and monitoring procedures for interim revegetation are outlined on page 4-64 of the attached information. Texaco will be responsible for establishing successful interim revegetation in the area. Energy West will monitor this section of interim revegetation to determine if it is successful. Texaco will be responsible for maintaining the area until the interim vegetation is determined to be successful.

SUMMARY

Texaco is required to perform the following work on the disturbed Energy West permit area along the Des-Bee-Dove haul road:

1. Reconstruct the disturbed drainage ditch along the haul road. Construct according to Drawing 5-1, Sheet No. 2, Typical Drawing No.2.

2. Texaco will be responsible for any settling that may occur along the ditch line for a period of 18 months.

3. Provide interim revegetation to the area. Approximate disturbed areas are identified on Drawing 5-1, Sheet No. 6 and Sheet No. 7.

4. Texaco will maintain interim revegetated area until revegetation is determined to be successful. Energy West will monitor the area and advise Texaco of any deficiencies that require repair.

If you have any questions concerning this matter please call Dick Northrup, 687-4822, Bob Willey, 687-4825, or myself, 687-4720. Thank you for assistance and cooperation in this matter.

Sincerely,

Chuck Semborski

SEEDING (FALL 1988)

1. Slopes were cleaned of debris.
2. The seed mixture (Page 4-63) was applied.
3. The hydromulch/tackifier/fertilizer mixture was applied at the following rates:

Sylva fiber hydromulch	2000 lbs/acre
Organic tackifier	120 lbs/acre
Ammonium nitrate	50 lbs/acre
Triple superphosphate	75 lbs/acre

MAINTENANCE AND MONITORING

1. Signs will be placed around the planted slopes.
2. Weed control will not be undertaken unless it is determined necessary due to weed dominance and delayed rate or succession. Studies indicate that competition from weeds, including Salsola kali, is greatly reduced within three (3) years after revegetation. Preliminary on-site studies support published reports on this matter. All noxious weeds will be eradicated if they become established on the site.
3. Rodent damage, on revegetated areas, will be assessed and species-specific control measures will be implemented as necessary.
4. A site visit will be scheduled at least once each year to check on fitness of the sites and progress of the plant growth. Observations will be made to

assess potential problems including; erosion, animal impacts, unusual conditions, (e.g. abnormal plant growth, areas of poor vegetation, etc.). Erosion will be repaired as needed.

5. Ground cover will be assessed by ocular estimation using meter square quadrants. Interim revegetation will be determined successful when erosion is effectively controlled or ground cover is a least 60%.

6. Annual report that summarizes the year's work will be placed in the Company's files and forwarded to DOGM and USFS.

7. The soil materials on the fill slopes will be sampled at five year intervals to record productivity changes. Five samples at 0-6", 6-12", and 12-18" depths will be composited for each of the five fill slopes for analysis. Analyses will be performed in accordance with Division Guidelines and will include:

   1. Soil Texture
   2. pH
   3. Electrical Conductivity
   4. Sodium Adsorption Ratio
   5. Organic Carbon/Organic Matter
   6. Saturation Percentage
   7. Available Water Capacity (1/3 and 15

atmosphere water)

8. Standard Ferility Test (for P and K analysis)

9. Field estimate of percent Rock Fragments (by volume)

Additional sampling will be conducted, as needed to delineate any problem areas identified during initial sampling.

INTERIM REVEGETATION (FUTURE)

When necessary to effectively control erosion on disturbed areas, seeding and planting will take place as contemporaneously as practicable with the completion of backfilling and grading. The following seed mixture and plantings will be applied at the specified rates. The species were recommended by the US Forest Service as being consistent with the management plan for the area. (Please refer to the Final Revegetation Plan for justification of introduced species.)

COMMON NAME	SCIENTIFIC NAME	LBS/ACRE EQUIVALENT PLS*
Grasses		
Thickspike Wheatgrass	Agropyron dasystacyum	2
Crested Wheatgrass	Agropyron cristatum	1
Western Wheatgrass	Agropyron smithii	3
Intermediate Wheatgrass	Agropyron intermedium	3
Smooth brome grass	Bromus inermis	2
Indian Ricegrass	Oryzopsis hymenoides	2
Needle-and-thread grass	Stipa comata	2

COMMON NAME	SCIENTIFIC NAME	LBS/ACRE EQUIVALENT PLS*
Forbes		
Pacific Aster	Aster chilensis var. adscendens	0.2
Utah vetch	Hedysarum boreale	1
Yellow Sweetclover	Melilotus officinalis	2

Alfalfa	Medicago savtiva var. Nomad	1.5
Eaton Pentstemon	Penstemon eatonii	0.4
	Total	20.1

*Application rates result in approximately 80 seeds/ft^2.

Shrubs

Serviceberry	Amelanchier alnifolia	100
Fourwing saltbush	Atriplex canescens	50
Snowberry	Symphoricarpos oreophilus	100
Winterfat	Ceratoides lanata	50

INTERIM REVEGETATION METHODS (FUTURE)

1. Seedbed Preparation

   Seeding will take place as contemporaneously as practicable following soil placement; therefore, the seedbed will be in a condition suitable for seed application. However, if a surface crust has developed it will be broken up by hand or mechanical tilling.

2. Seeding

   The seed mixture will be hand broadcast with "hurricane spreaders" or applied by hydroseeder at the specified rate.

3. Fertilizer Application

   The following fertilizer combination will be applied by hand broadcasting with "hurricane spreaders" or as a separate operation of hydroseeding:

Ammonium Nitrate	40 lbs/acre
Triple Superphosphate	35 lbs/acre

4. Seed Covering

   Following hand broadcasting of the seed mixture and fertilizer, the sites will be hand or mechanically raked to cover the seeds.

5. Mulch Application

   Following hand broadcasting and raking, the seeded areas will be covered with hay mulch (2 tons per acre) and netting or erosion control mulch blanket. The netting or blanket will be mechanically anchored per the manufacturers specifications.

   Following hydroseeding, a hydromulch with tackifier will be applied at the rate of approximately 2000 lbs/acre.

The criteria for interim revegetation success will be the establishment of at least 60% ground cover, on the majority of the slope, which prevents or minimizes erosion. Maintenance and monitoring will be conducted as described for 1988 interim seeding.

FINAL REVEGETATION PLAN

The fill material at the bathhouse fill will be the planting medium. Seeding will take place as contemporaneously with soil grading as is practicable in late fall. If considerable time (i.e. over one month) lapses between soil grading or seedbed