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UTAH POWER & LIGHT COMPANY

1407 WEST NORTH TEMPLE STREET

P. O. BOX 899

SALT LAKE CITY, UTAH 84110

May 31, 1983

Mr. James W. Smith, Jr.
Coordinator of Mined Land Development
State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Smith:

SUBJECT: NOV 83-4-1-1
Deer Creek Mine
ACT/015/018A

Attached are the changes to the Deer Creek conveyor plans agreed to during our field trip of May 17, 1983.

Should you require additional information, please advise.

Yours truly,



C. E. Shingleton
Director of Services
Mining and Exploration

CES:BMcQ:bb:3927
Encl.

RECEIVED
MAY 31 1983

DIVISION OF
OIL, GAS & MINING

NOTE: ENCLOSED WERE 3 SETS OF PLANS



DEER CREEK MINE

file ACT/015/018 A
RECEIVED #7
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REVISED ABATEMENT PLANS OF N.O.V. 83-4-1-1

DIVISION OF
OIL, GAS & MINING

On May 18, 1983 a meeting was held on-site to discuss the proposed abatement procedures. Following are the agreed upon results of that conference, in attendance were Dave Lof, Tom Munson and Ev Hopper Division of Oil, Gas and Mining, Chris Shingleton Utah Power and Light and Larry Guymon Emery Mining Corporation:

1. A letter of certification for the entire plan is enclosed as requested.
2. Plate II is revised as follows:

On the C-1 portion of the conveyor the two creek crossings will be culverted and a concrete collar will be poured around the pipe on the upstream end to reduce erosion and provide inlet control for the pipes.

The section of conveyor between the crossings will be bermed on the creek side to channel water to a common point where a silt fence filter will be installed before discharge into the creek.

The section of conveyor from the lower creek crossing to where the conveyor crosses the mine access road will be bermed on the creek side to channel water to a common point for treatment with a silt fence filter before discharge into Deer Creek.

The ditch off the powder magazine pad will be rip-rapped as stated previously from the pad level into the 36" Diversion Culvert. This area is to be treated as a small area disturbance and will be granted a variance.

An inlet will be installed in the bar ditch along the mine access road into the 36" culvert from the powder magazine canyon.

A small area on the South of the mine access road and two areas between the access road and the C-1 Conveyor are to be permanently reclaimed (see attached reclamation plan).

Bar ditches will be located along the C-1 Conveyor and maintenance road at approximately 250' intervals. Exact location will depend on the area where the ditch discharges down the slope. Areas where minimum erosion will take place will be chosen. A silt fence filter will be installed on the discharge end of the ditch. Slope on the bar ditch will be from the conveyor across the road except for the last ditch which will slope the opposite direction and discharge into a diversion ditch between the hill slope and conveyor. This ditch will discharge into the inlet of the 36" culvert at the C-2 transfer. A silt fence filter will be installed at the discharge of the bar ditch and where the diversion ditch discharges into the inlet.

The C-2 portion will be changed as follows: Water bars installed along the section from the C-2 transfer to the 1st creek crossing will slope North to South (conveyor to road) located and treated as on C-1. The diversion ditch will be deleted. One additional water bar will be located just ahead of the culvert, at the creek crossing sloping South to North.

Along the section from the first creek crossing to the second creek crossing where the mine access road parallels the conveyor water bars will be installed as needed sloped South to North or vice versa as determined to fit topography and treated with silt fence.

Culvert #3 will be deleted as it serves no purpose.

An existing 18" culvert is shown that was not identified on the first submittal. Work on the inlet will be done; installation of berms and silt fence filters. (See typical inlet on Plate II.)

All diversion ditches on the north side of the conveyor will be deleted except as shown on Plate II. These two sections of ditch will be built with a rubber tired backhoe so as to minimize the effect on the established vegetation.

Culvert #4 will be installed as shown on Plate II and will have prefabricated inlet and outlet structures.

Culvert #5 will be deleted as it serves no purpose.

The maintenance road along the conveyor will be graded and bermed as needed to control the drainage to match the desired drainage plan.

Areas disturbed during construction will be revegetated as requested by the Division.

NOTE: THIS IS PART OF THE ABATEMENT PLANS FOR
NOV 83-4-1-1 *D*

RECLAMATION AND REVEGETATION PLAN

DEER CREEK MINE C1 CONVEYOR

RECEIVED
MAY 31 1993

DIVISION OF
OIL, GAS & MINING

INTRODUCTION

This plan is submitted in accordance with UMC 784.13, UMC 817.100 - 114, and the Deer Creek Coal Mine Permit Application. The primary objectives of the reclamation efforts are: (1) Erosion control, and (2) Evaluation of proposed Final Reclamation Revegetation Species and methodologies. The area to be reclaimed includes three sites as indicated on Utah Power and Light Company Drawing CM-10493-DR. It is not intended that the areas will be redisturbed; therefore the intent of this plan is to address permanent reclamation.

DESCRIPTION OF AREA

All reclamation sites are located in Deer Creek Canyon adjacent to the Deer Creek Mine access road. Site #1 contains approximately 0.28 acres and slopes Northeast at 8.13%. Site #2 slopes Northeast at 7.98% and contains approximately 0.43 acres. Site #3 contains approximately 0.21 acres, and slopes Northeast at 8.30%.

RECLAMATION

Backfilling and Grading:

Because of the relatively flat condition of the reclamation sites, backfilling and grading requirements are minimal.

A small erosion channel exists in some locations along the west side of sites one and two, at the base of the slope. This channel will be backfilled and large boulders will be placed at the base of the slope in an effort to control slope sloughage.

Sites #1 and #2 will be graded such that runoff water will move diagonally across the sites from the slope to the drainage ditch which parallels the access

road. Grading of site #3 will include removing the existing berm from the South edge of the site and distributing this material over the site. Drainage will be diagonally across the site into the stream channel.

Soil Sampling:

Soil samples will be taken at random intervals throughout each site. Chemical and physical analyses will be conducted to determine the suitability of the soil as plant growth medium. If hot spots are identified they will be treated as required by UMC 817.48 and UMC 817.103(a)(2).

Revegetation:

Revegetation of the sites will be accomplished after the backfilling, grading and soil analysis are completed. A mixture of native species will be used as shown in Table 1 of the Appendix.

Revegetation will be accomplished according to the following procedure:

Step 1 - Soil Preparation

Prior to seeding, the soil will be scarified to retard surface runoff, increase infiltration, and soften the soil for seeding and planting. The scarifying will be done in a manner which is compatible with the grading and drainage discussed previously.

Fertilizers and other soil additives will be incorporated into the soil to enhance plant and root growth. The specific fertilizers and additives, and the rates of application will be determined from the results of the soil analysis.

Step 2 - Seeding

Seeding will be accomplished by a variety of methods including but not limited to dry broadcasting using a cyclone seeder and drill seeding. Each grass species will be planted at a rate of 5 pounds Pure Live Seed per acre. Forbs will be seeded at the following rates:

Utah Sweetvetch (<u>Hedysarum boreale</u>)	3 lbs. PLS/acre
Lewis flax (<u>Linum lewisii</u>)	1/2 lb. PLS/acre
Palmer penstemon (<u>Penstemon palmeri</u>)	1/4 lb. PLS/acre

Step 3 - Mulching

Immediately after seeding, a variety of mulches will be applied at the three separate sites to enhance revegetation success.

The mulches will include, but not be limited to, straw and Jute netting. The straw mulch will be applied at a minimum rate of one ton per acre. It will be crimped by use of a disc harrow or other means to minimize losses due to water movement and wind. The Jute netting will be stapled. If other mulches are used, they will be appropriately tacked by mechanical or chemical means.

Step 4 - Planting

Following mulching, containerized shrubs and trees will be transplanted. The shrubs will be transplanted at a rate of 1,000 plants per acre. The tree seedlings will be distributed at a density of 200 plants per acre.

The shrub and tree seedlings will be distributed so as to maximize benefit to wildlife, i.e., grouped so that edge effect is optimized, as per UMC 817.97(d)(9)(ii).

Step 5 - Irrigation

Irrigation may be necessary during the first growing season to enhance germination and aid seedling establishment but it will be conducted only when necessary. The need for irrigation will be determined by the physical appearance of the plants, i.e. plants appear dessicated.

Step 6 - Revegetation Monitoring

Revegetation success will be monitored using accepted methods which produce the necessary statistical confidence level. Success will be based on ground cover, productivity and species diversity as compared to the reference area. Monitoring will also be beneficial in evaluating the proposed Final Reclamation Revegetation species and methodologies.

Soil monitoring will be conducted annually to determine the need for additional fertilizer application and to anticipate problems of chemical toxicity and soil borne diseases.

Step 7 - Weed and Pest Control

The need for weed and/or pest control will be determined from revegetation monitoring. Control measures will be instituted only after consultation with the appropriate governing agencies. Selection of appropriate control measures will insure that the surrounding terrestrial and adjacent aquatic ecosystems are not detrimentally affected.

Timing:

The favorable spring revegetation season has passed this year; therefore, the seeding and mulching aspects of the revegetation plan will be conducted in the late fall of 1983 (October). The planting phase will be accomplished during the spring of 1984 (April).

Due to the need to delay major revegetation efforts, a temporary ground cover will be established immediately. Establishment of the temporary cover will be achieved by seeding a mixture of Barley (Hordeum vulgare) and Yellow sweet clover (Melilotus officinalis) at the following rates:

Barley	100 lbs. PLS/acre	14,000 s/lb
Yellow sweet clover	20 lbs. PLS/acre	260,000 s/lb

The benefits derived from the temporary cover crop are erosion control and soil building, i.e., addition of nitrogen and organic matter to the soil.

140,000
x 100 = 14,000,000 Barley seeds/acre

260,000
x 20 = 5,200,000 Yel. Sw clover seeds/acre

Total 6,600,000 seeds/acre

≈ 150 seeds/ sq foot

APPENDIX

TABLE 1. RECOMMENDED SPECIES FOR REVEGETATION
AFTER TERMINATION OF MINING OF
THE PINYON-JUNIPER VEGETATION TYPE

		lbs/Ac	
<u>Grass</u>			
Western wheatgrass	<u>Agropyron smithii</u>	5	110 K
Bluebunch wheatgrass	<u>A. spicatum</u>	5	117 K
Salina wildrye	<u>Elymus salinus</u>	5	380 K
Indian-rice grass	<u>Oryzopsis hymenoides</u>	5	140 K
<u>Shrubs</u>			
Saskatoon serviceberry	<u>Amelanchier alnifolia</u>	-	
Curl-leaf mountain mahogany	<u>Cercocarpus ledifolius</u>	-	
Big sagebrush	<u>Artemisia tridentata</u>	-	
Mormon tea	<u>Ephedra viridis</u>	-	
<u>Forb</u>			
Utah sweetvetch	<u>Hedysarum boreale</u>	3	33.5 K
Lewis flax	<u>Linum lewisii</u>	1/2	293 K
Palmer penstemon	<u>Penstemon palmeri</u>	1/4	610 K
<u>Tree</u>			
Pinyon pine	<u>Pinus edulis</u>		

Total seeds

Grass = 3,775,000/acre
Forbs = 400,000/acre

4,175,000

almost 100 seeds/sq. foot

OK