State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

DIVISION OF OIL GAS & MINING
FIELD VISIT FORM
TECHNICAL

Date: July 23, 1996

Time: 9:00 AM to 2:00 PM

Mine: Skyline

File Number: ACT/007/005, Folder #2

DOGM Staff: Paul Baker

Other Attendees: Keith Zobell

Purpose: To look at vegetation on the conveyor bench and cuts. The company has been trying since about 1981 when the conveyor cuts were first made to get vegetation growing on them. These revegetation efforts are considered final revegetation.

Observations: The problem with the cuts and benches made for the conveyor is that they cannot be regraded to more gentle slopes, and it would be impossible to put topsoil on most of them even if the topsoil was available. When the mine was originally permitted, the road was permitted and the company planned to eventually reclaim it. With this reclamation plan, it would have been possible to obtain the fill needed to take the cuts back to a slope near what is on adjacent areas and to apply topsoil. However, the road was subsequently designated as a State highway that is not permitted and would not be reclaimed. Because of the location of the road and the fact that much of the fill from the conveyor cuts is under the road, it is no longer possible to put fill on the cuts and to topsoil them.

The amount of vegetation on the cuts and benches has been increasing slowly over the past several years. So far, most efforts have been concentrated on the first major cut just east of the mine, but there has been some work on the entire area. There are also some test plots near the end of the last conveyor bench. In 1996, Skyline planted 1275 western wheatgrass and 1350 intermediate wheatgrass plugs. They also planted 500 golden currant, 1000 sagebrush, 1000 rabbitbrush, and 325 yarrow plants.

Some of the aspens are starting to spout and establish where there is soil near the tops of the cuts. Also, in most areas, the tops of the cuts are reasonably stable and not raveling. I discussed with Mr. Zobell the importance of stabilizing these "eyebrow" areas. He agreed that if you can stabilize these areas, you can usually stabilize entire slopes both above and below the

eyebrows.

Because of the dry spring and summer, success this year was not too good. However, the total amount of vegetation continues to increase, and there is very good diversity.

We talked about Skyline starting to make more efforts to revegetate the cuts farther down the canyon. There are still some areas on the first large cut where some things could be planted, but I agreed with Mr. Zobell that it is now time to concentrate on some of the other areas.

The lowermost cut has a large shaley outcrop. This area will be particularly difficult to revegetate. It is usually very difficult to establish vegetation on soils derived from shales in this area. This combined with a very steep (1h:1v) slope and a large area of rock outcrop means revegetation will be nearly impossible. Above the shale outcrop is an area of sandstone with a lot of cracks and ledges where some vegetation has established.

We discussed options for a revegetation success standard. Skyline does not want to change the postmining land use which is grazing and wildlife habitat. However, it will be nearly impossible to establish enough vegetation on the slopes to meet the revegetation success standards. The revegetation reference area has around 90% vegetative cover, but, in spite of Skyline's efforts, the most vegetation they can expect is probably closer to 50%.

Recommendations/Conclusions: We were not able to reach a definite conclusion about what success standards are going to be used and how Skyline will achieve these standards. There are a few areas we found where some backfilling could be done if Skyline has enough fill material, but the fill may simply not be available. I agreed with Mr. Zobell that they should run one or more transects across the area where revegetation efforts have been occurring to see how much is now established. We also discussed some other revegetation options like planting trees along the bottom of the cuts in an attempt to hide the cuts. However, the main issue of how to actually meet the success standard still remains.

On August 7, 1996, we plan to meet with George Cook of the Natural Resources Conservation Service and hear his suggestions. He has some familiarity with the coal program's regulatory requirements and can hopefully contribute some ideas.

Signature: _____ on August 6, 1996

~~<Name>, <Title>~~ Paul B. Baker, Reclamation Biologist

H:\INSPECT\FIELDVST.TPL

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

DIVISION OF OIL GAS & MINING
FIELD VISIT FORM
TECHNICAL

Date: August 7, 1996

Time: 9:30 AM to 3:00 PM

Mine: Skyline

File Number: ACT/007/005, Folder #2

DOGM Staff: Paul Baker

Other Attendees: Keith Zobell and George Cook

Purpose: To evaluate the range condition of the reference areas and to look at the SCS test plots near the end of the conveyor bench.

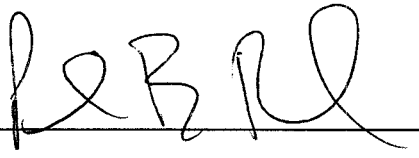
Observations: Mr. Cook took notes about the productivity of various species in the reference areas and will determine what condition they are in. He commented that the aspen reference area was probably in excellent condition, and I believe the other reference areas also have very good diversity and cover. In particular, the area along Eccles Creek in the riparian area has made remarkable improvement since I last saw it. A few years ago, it looked like the raw banks were healing, but they were still raw, exposed banks. Now, there are no banks where soil and water are in contact. There is still some exposed soil, but these areas are becoming less vertical and are filling in with vegetation.

In the test plots, the following species were most successful: mountain rye, Sherman big bluegrass, Luna pubescent wheatgrass, blueleaf aster, and rush wheatgrass. Other species that are present that are not doing quite as well include Paiute orchardgrass, lewis flax, hard fescue, slender wheatgrass, and Topar and Tegmar intermediate wheatgrass.

We also discussed the continuing concern about what revegetation success standard to use for the conveyor cut. Skyline has made considerable efforts to revegetate these slopes with some success, but they will never achieve the current success standard. It occurred to me that reference areas are supposed to have similar soils to the reclaimed areas they are compared to. I see two choices: We can either average cover data from the cuts with the numbers from other reclaimed areas, or we can find a reference area with similar soils, IE an area with a rock outcrop. These are both viable options, but the second approach would need to be well justified with information that it is impossible to put fill and soil back on the slope.

Susan White and Sharon Falvey of the Division recommended some different revegetation techniques. These include using Excelsior matting and using SoilGuard mulch which is a type of wood fiber hydromulch. My experience with the SoilGuard is that it sticks very well even to exposed rock, but I couldn't tell that it necessarily increased the amount of vegetation. Excelsior matting has been used on some very steep slopes elsewhere and may increase the amount of vegetation that becomes established. I will make these recommendations to Mr. Zobell.

For now, Mr. Zobell intends to expand his efforts on cuts farther down the canyon. There is still some work that needs to be done on the uppermost cut, but we both feel it's time to start moving down.

Signature:  on August 8, 1996

Paul B. Baker, Reclamation Biologist

H:\INSPECT\SKYCOOK.FVT