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

Michael O. Leavitt
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July 11, 2000

Mike Glasson, Environmental Coordinator
Andalex Resources
6750 Airport Road
P.O. Box 902
Price, Utah 84501

Re: Annual Evaluation of Experimental Practice, West Ridge Resources, Inc. West Ridge Mine,, ACT/007/041, Outgoing File

Dear Mr. Glasson:

The Division has completed an evaluation of the Experimental Practice at the West Ridge Mine as required under R645-302-217. The attached memo discusses the results of the evaluation. Please review it carefully. One concern that was identified during the evaluation was the potential for sulfides in the coal and coal mine waste materials to produce acid leachate and contaminate the underlying soil resources. In order to protect the soil resources, you should amend your MRP to include an annual monitoring plan to detect the potential for acid formation. Please submit the plan by no later than August 11, 2000.

If you have any questions, please call.

Sincerely,

Daron R. Haddock

Daron R. Haddock
Permit Supervisor

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Enclosure:
cc: Price Field Office
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June 21, 2000

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist
Robert Davidson, Reclamation Soil Scientist

RE: Annual Evaluation of Experimental Practice, West Ridge Resources, West Ridge Mine, ACT/007/013

SUMMARY:

The Division is required to conduct an annual evaluation of the experimental practice at the West Ridge Mine. In this experimental practice, much of the topsoil and other soil resources at the site are buried rather than being salvaged.

With the information currently available, the Division can conduct only a very limited assessment of whether the practice will be successful. Some construction was not done according to the plan, and it is possible this has jeopardized topsoil protection. West Ridge Resources has been required by a Division Order to submit further information showing how the mine was constructed and how it will be reclaimed.

TECHNICAL ANALYSIS:

SPECIAL CATEGORIES AND AREAS OF MINING

EXPERIMENTAL PRACTICES MINING

Regulatory Reference: R645-302-210

Analysis:

The mining and reclamation plan for the West Ridge Mine includes an experimental practice that was approved by the Division and the Office of Surface Mining, Reclamation and Enforcement (OSM). The approved Experimental Practice allowed the operator to bury in-situ topsoil under imported and native fill rather than salvaging these soils. Geotextile or marker strips were placed on top of the soil surface, and this was covered by fill material used to build the pads. The mine plan also includes provisions for test plots to study the feasibility of the experimental practice.

Test Plots

The Division has previously reviewed both an original and modified test plot design, so no further analysis is needed. The test plots were originally installed in May 1999, but this was not done according to the Mining and Reclamation Plan (MRP). Subsequently, representatives of the Division, OSM, and West Ridge Resources visited the test plot site and agreed on modifications that helped meet the test plot purposes. The modifications were completed in October 1999 under the observation of Division representatives. The mining and reclamation plan has been modified to reflect the changes in the test plot design.

The test plots were seeded in October 1999 with the interim revegetation seed mix. On June 6, 2000, three Division representatives observed many grasses growing on three of the four plots. The fourth plot, the Midfork soil storage area, was mainly covered with stinging nettle. It looked as if the other three plots may have been seeded more heavily than specified in the plan, but with average precipitation, adequate vegetation should become established.

Highwall

During construction, West Ridge Resources constructed the highwall much larger than proposed in the MRP. The Division is concerned about the height and size of the highwall for several reasons, including the potential effects on the experimental practice during reclamation and highwall elimination. In order for the experimental practice to work, the highwall must be fully reclaimed to nearly its exact original contour and retain a long-term static safety factor of at least 1.3. However, the original slope before being cut for the highwall was already steep. If the slope needs to be less steep than it was before mining in order to reclaim the highwall to meet adequate stability, the toe of the slope would potentially cover the soil in the experimental practice area making this soil unavailable for revegetation.

Division Order 00A requires the permittee to provide a reclamation plan for the highwall showing how soils in the experimental practice area will be protected while the reclaimed highwall will have a static safety factor of at least 1.3. When the Division receives this information, it should be possible to better determine if the soils of the experimental practice area are in jeopardy.

Topsoil Pile

Grasses are coming in well on the topsoil pile along with a few shrubs and forbs. Canyon sweetvetch, a Bureau of Land Management sensitive species, was planted on the topsoil pile, but it is not yet clear whether this species has started growing. In the June 6, 2000, visit, Division representatives observed legumes growing on the topsoil pile, but the seedlings could not be identified. It is possible that, even if these seedlings were not canyon sweetvetch, canyon sweetvetch seeds could germinate later. This species has seed that can remain dormant for at least a few years before it germinates. It will be necessary to continue checking the topsoil pile.

Toxic and Acid Forming Materials

During the June 6, 2000, visit, the Division representatives noticed a strong sulfide odor emanating from the coal and mine. Upon oxidation, sulfide weathers to acid forming materials. If coal and/or coal waste material is allowed to weather sufficiently over the life of the mine, the possibility of acid leachate could permeate the fills and negatively affect the buried soils underneath the mine pads. A monitoring plan needs to be instigated during the annual reviews to determine if the mine pad areas affected by the coal are being acidified. If acid conditions are detected on the surface, then further investigations and sampling should be performed to determine if the acid leachate is permeating the fills into and affecting the buried topsoil. If such a condition is detected, then West Ridge Resources should be required to take corrective measures to protect the buried topsoil resources from any additional acid leachate, e.g., lay down a limestone layer to neutralize acid leachate.

Findings:

The permittee must provide the following in accordance with the requirements of:

R645-302-216 and R645-302-217: After the annual review, the Division requires a reasonable modification of the Experimental Practice to ensure that the activities fully protect the buried soil resources. West Ridge Resources needs to amend the MRP to include an annual monitoring plan to sample and determine if the mine pad areas affected by the coal are being acidified. If acid conditions are detected on the surface, then further investigations and sampling needs to be performed to determine if the acid leachate is permeating the fills. If such a condition is detected, then West Ridge Resources should be required to take corrective measures to protect the buried soil resources from any additional acid leachate, e.g., lay down a limestone layer to neutralize acid leachate.

sm
cc: Bob Postle, OSM
Mary Ann Wright
Pam Grubaugh-Littig
Pete Hess
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