0022

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
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

August 1, 1989

TO: Susan Linner, Permit Supervisor

FROM: James Leatherwood, Reclamation Soils Specialist

RE: Determination of Completeness, Five-Year Permit Renewal Review, Utah Fuel Company, Skyline Mine, ACT/007/005, Folder #2, Carbon County, Utah

## SUMMARY

The Five-Year Permit Renewal Review for the Skyline Mine, received July 19, 1989, has been reviewed. Several minor concerns exist and are addressed on the attached. Only one major completeness issue exists and is addressed in the following analysis.

## ANALYSIS

### UMC 783.21 Soils Resources Information - JSL

A soil description and corresponding soil survey map for the South Fork Breakout has not been provided within the Mining and Reclamation Plan (MRP). In addition to a map, identify the soils within the South Fork Breakout disturbance area, the soils identification, description and productivity levels must be given.

## RECOMMENDATION

In order for the Skyline Mine MRP to be considered complete the above mentioned concerns must be addressed.

cl
Attachments
cc: R. Harden
L. Kunzler
H. Sauer
BT51/103

(Map 2.11-1) and the numerous soil descriptions and analyses can be readily extrapolated using the EPS report. Consolidated rock strata of the Blackhawk Formation are more difficult to map, however, and make the extrapolation of core data more difficult.

In this Application, the Aberdeen Sandstone and the overlying upper coal-bearing unit of the Blackhawk Formation are described. In the portal area, the Aberdeen Sandstone lies from 0 to 4 feet below the lowest coal seam to be mined and is continuous and of uniform lithology. Therefore, the Aberdeen description as presented suffices to characterize the lowest unit of interest throughout the portal area, even though it is poorly exposed. In contrast to the Aberdeen, the overlying sedimentary rocks are variable in extent and lithology. Because of the highly variable nature of these poorly exposed rocks, detailed mapping of individual lithologic units in the subsurface is not feasible. However, certain generalizations can be made regarding the relative percentages of the rock types present. Recent interpretative geologic work has focused on modelling ancient depositional environments for the sedimentary rocks in the coal-bearing sequence immediately overlying the Aberdeen Sandstone. Based on concepts developed it is possible to make general statements about the frequency of occurrence of various rock types in any area of the property. These predictions based on depositional models are believed to be more reliable than simple extrapolation between boreholes.

Stratigraphic studies in the permit area are based primarily on subsurface geophysical logs. These logs are available at the Skyline Mine office. The sources used to interpret lithology include the natural gamma, the gamma-gamma (density), the single-point resistivity, and sometimes the spontaneous potential and caliper logs. Studies of the relative percentages of sandstone, siltstone, claystone, and coal in each borehole suggest that ancient stream channels present in a specified stratigraphic interval had preferred orientations, and tend to be stacked in echelon or otherwise concentrated along trends of high sandstone percentage.

total suspended solids in stream flows. The overall slope of the cut banks is one horizontal to one vertical (1h:1v). This slope factor is based upon the geotechnical design recommendations (Volume A-3).

The benches that are made of compacted fill were constructed such that each lift was of sufficient height to ensure that maximum compaction occurred. When the benches reached the proper elevation, each bench was tested to ensure that compaction was adequate for building foundations and other structures and met the local and state building codes.

Upon abandonment of the mine site, the benches will be ripped, topsoiled and revegetated. The cut slopes will be reduced to a more gradual grade and will be topsoiled and revegetated as described in the topsoil and revegetation plans in Sections 4.6 and 4.7. This will allow a return of the mine site to the desired wildlife/grazing (rangeland) habitat.

Changehouse and Shop Complex

The interior of the building consists of office-training-safety areas, changeroom areas, analytical laboratory, warehouse storage area, shops and maintenance bays. The building was designed to meet all applicable local and state codes and regulations. The exterior siding is of a material that requires little maintenance throughout the life of the mine.

When mining is completed, the building will be removed from the mine site. Depending upon the depth, the foundation will either be fractured or covered with a minimum of two feet of soil.

on / should be changed to and

was nearly completed, an exterior metal siding was placed on the steel structure.

All structural steel was painted and will be periodically repainted as necessary to maintain it. As for the metal siding, little maintenance is required throughout the life of the mine.

As soon as mining is completed, the crusher building will be removed. The structural steel and equipment will be salvaged. Depending upon depth, the foundation will either be fractured and covered with a minimum of two feet of soil. should be deleted from text.

Truck Load-out

The foundation for the load-out tower was built upon compacted fill. As soon as the concrete foundation was cured, steel support columns were erected. Once in place, a 200-ton capacity storage bin was installed. After bin installation was completed, the top floor was installed. With completion of the floor, the belt drive motor, gear reducer, head pulley and dust collector system were installed. The top of the structure is completely enclosed with exterior siding. All structural steel was painted and will be periodically repainted to maintain it. The metal siding needs little maintenance throughout the life of the mine.

On abandonment of the mine, the truck load-out structure will be removed. The steel and equipment will be salvaged. The foundation will be fractured and covered with a minimum of two feet of soil.

Mine Portals

A total of thirteen mine portals for the three mines are constructed for the mine: four on the upper bench, one on the middle bench, five on the lower bench and three at the South Fork

The spreading and compaction of the rock waste will be accomplished through the use of a dozer/loader and dump trucks. The dozer/loader will be used to spread and level the material and both the dozer/loader and the dump truck will be used to compact the material. Repeated, long-term operation of the equipment on each lift of material will ensure adequate compaction of the fill.

The Permittee cannot commit to the size of the dozer or the number of trucks to be used during the infrequent use of the pit. The Permittee will use its 10-ton capacity truck that may be supplemented by others which, in addition to the dozer, will be used as the need occurs.

The rock waste disposal site will be inspected at least quarterly during active disposal operations.

The Permittee's registered engineer or other qualified professional specialist will provide the Division a certified report within two weeks after each quarterly inspection and after the completion of construction. The reports will describe the activities during the reporting period and will certify that the site has been constructed and operated as specified in the design approved by the Division.

Acid and Toxic-Forming Material

The potential for encountering acid or toxic-forming materials is discussed earlier in this section. Based on these tests, these materials are not expected to be present. If encountered, a handling and disposal plan will be formulated as outlined in Section 4.4.5.

adequate
No discussion prior to this statement.

| REPLACES | TEXT |
|---|---|
| Section 3.2.8 Page 3-60 - 3-61 | Section 3.2.8 Page 3-54 Date 07/07/89 |

Branch Code 17

Lab. No 72203

Rec'd. 07.20.87

Sampled 07.17.87

Sampled By YOURSELVES

STANDARD LABORATORIES, INC

SAMPLE ID:

ROOF SAMPLE

where is this sample from?

UTAH FUEL COMPANY
COASTAL STATES ENERGY
175 EAST 400 SOUTH
SALT LAKE CITY, UTAH 84111
(801) 529-7428

## ACID - BASE ACCOUNTABILITY
### CACO3 EQUIV. (TONS/1000 TONS OF MATERIAL)

| CORE | FIRE | %SUL. | MAX. FROM %SUL. | AMOUNT PRESENT | MAX. NEEDED IN ? | EXCESS | PASTE pH |
|---|---|---|---|---|---|---|---|
| 5Y (-1 | 1 | 0.069 | 2.16 | 39.42 | | 37.27 | 7.94 |

ELECTRICAL CONDUCTIVITY - 530 MMHOS/CM

PARTICAL SIZE ANALYSIS (BY HYDROMETER)

% SAND 45.6

% SILT 38.6

% CLAY 15.8

SODIUM ABSORPTION RATIO - 0.193 meq/L

SATURATED WATER PERCENTAGE - 39.80%

TOTAL SELENIUM - 1.08 ppm

TOTAL BORON - 5.68 ppm

Respectfully Submitted,

CLIFF SMART 08.21.87

Branch Code 43

Lab No 71932

Rec'd 05/05/87

Sampled 04/30/87

Sampled By YOURSELVES

STANDARD LABORATORIES, INC.

SAMPLE ID: WASTE ROCK SAMPLE

where is this sample from?

UTAH FUEL COMPANY
COASTAL STATES ENERGY
~~411 WEST 7200 SOUTH~~
~~MIDVALE, UTAH 84047~~

---

ACID - BASE ACCOUNTABILITY

CACO3 EQUIV. (TONS/1000 TONS OF MATERIAL)

| COLOR | FIZZ | %SUL. | MAX. FROM %SUL. | AMOUNT PRESENT | MAX. NEEDED pH 7 | EXCESS | PASTE pH |
|---|---|---|---|---|---|---|---|
| 10YR 5/1 | 0 | 0.704 | 22.00 | 7.73 | 14.27 | 0 | 7.89 |

ELECTRICAL CONDUCTIVITY - 700 µmhos/cm

PARTICAL SIZE ANALYSIS (BY HYDROMETER)

| | |
|---|---|
| % SAND | 71.60 |
| % SILT | 20.20 |
| % CLAY | 8.20 |

SODIUM ABSORPTION RATIO - 1.16

SATURATED WATER PERCENTAGE - 39.16%

TOTAL SELENIUM - 0.45 ppm

TOTAL BORON - 46.8 µg/g



Respectfully Submitted, Kayd Simpson

Long-Term Topsoil Storage Areas

During construction at the mine site, a stockpile area of approximately 0.6 surface acre was established in the draw on the north side of the site. The long-term stockpile is composed of topsoil collected at the mine site and portions of the conveyor bench. It will later be used for post-mining reclamation of the benches and conveyor routes.

Topsoil stockpile at S. Fork should be included here.

A second long-term topsoil stockpile, covering approximately 0.3 surface acre, was established at the load-out site for later reclamation use in that area.

4.6.3 Topsoil Protection

Long-term topsoil stockpile protection is achieved by the performance of the following operational steps:

- A stable surface is provided in an area outside the influence of active operation.
- As a stockpile was completed, it was left in a rough condition to minimize erosion.
- A diversion ditch was dug around these piles to divert runoff from entering the stockpiled area.
- Storage piles were vegetated with quick-growing, soil-stabilizing plants. Revegetation involved the immediate seeding of stockpiled topsoil with the seed mixtures listed on Table 4.6-1.
- Signs are posted to protect the stockpiles from accidental use as fill or from other inadvertant material contamination.
- The establishment of noxious plant species is prevented.
- The slope of stockpiles does not exceed 2h:1v.