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STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

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March 16, 1979

Mr. Kerry A. Frame
Chief Engineer
Southern Utah Fuel Company
P.O. Box P
Salina, Utah 84654

#2

RE: Sufco #1
Convulsion Canyon Mine
ACT/041/002

Dear Mr. Frame:

The Division staff has given the Waste Disposal and Drainage/Erosion Control Plan, submitted by you on February 6, 1979, a cursory review. We feel that the proposal could be unsafe and would not handle or control the erosion problem present.

The Division questions the idea of a "French drain" being used as conduit for by-pass water, while a sedimentation pond is built on top of it. During periods of high flow and/or during periods where the surficial material is saturated, it is possible for the fine grained fill material to work between the larger fragments in the drain and be subsequently washed or "piped" out. This would cause sediment erosion to increase from the compacted material in the sediment pond bottom and could conceivably cause instability of the foundation material on which the sediment pond was constructed.

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The storage volume required for the sediment pond is not defined as 0.1 acre foot for each acre disturbed area, but is 0.1 acre feet sediment storage volume in addition to the runoff volume resulting from the 10 year 24 hour rainfall event from the affected area and direct precipitation on the pond.

The Division would encourage the dumping of waste material down the slope to one location by means of a chute of bedrock if at all possible. Spreading and compacting of the material will be done from that location.

If Southern Utah Fuel Company still desires to follow this proposal, which needs to be altered to fit in line for Division approval, the following items are necessary:

1. Maps delineating the area affected and the relative location of the surface features to the rest of the mine.
2. Specifications on the sediment pond design and on the French drain's capability to handle the design storm's peak flow.
3. Sediment disposal plan that describes what will be done with the sediment that is cleaned from the pond.
4. NPDES discharge permit application for the sediment pond as well as a monitoring program for any possible discharge.
5. The Division concurs that the outer face of the compacted sedimentation pond dam should be planted with erosion-preventing vegetation. We would, however, request a further commitment from SUFCO as to the details of this revegetation: ie., species to be planted, rate of seeding and mulching, and the extent of any needed soil treatments. SUFCO has committed, in their original mining plan, to the revegetation of all disturbed areas, but to date, has not shown good faith in stabilization of the existing cut slopes where erosion and slumping are prevalent.

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6. Alternative pond locations between the fill slope and the junction of East Spring Canyon and Convulsion Canyon.

I hope this is helpful to you in re-working the proposal. If you have any questions do not hesitate to contact the Division.

Sincerely,



THOMAS J. SUCHOSKI
RECLAMATION HYDROLOGIST

TJS/te

cc: Murray Smith, Federal Lands Coordinator
Donald Crane, Regional OSM Director
Tom Gambill, Vice President Mining, Coastal States Energy
Vernal J. Mortensen, Vice President, Southern Utah Fuel Company
Richard Allred, District Ranger, Fishlake National Forest
Ronald Daniels, Utah Division of Oil, Gas, and Mining

Southern Utah Fuel Company's mine number one is located in East Spring Canyon which feeds south into Convulsion Canyon. Mud Spring Hollow, an intermittent tributary to East Spring Canyon, and the normally dry East Spring Canyon converge at the mine facilities location. The mine facilities are built upon cut and fill excavations which have been established since mining commenced in 1941. As mining has progressed, waste rock from the mining process has been dumped over the fill-face for disposal. This has gradually extended the mine yard to the south.

In 1976, a 72" drainage culvert was installed to extend upstream from the fill-face to the point where the intermittent stream of East Spring Canyon reaches the disturbed mine area. Mud Spring Hollow drains into a similar, but 48", culvert which ties into the 72" culvert. This culvert system is large enough to permit the upstream run off from a 100 year precipitation event to by-pass the mine site without picking up any sediment from the disturbed mine facilities area. The culvert discharges at the interface between the canyon wall and the fill-face at a location which permits the water to flow over natural canyon terrain rather than the softer fill material.

In 1977, a berm was built along the crest of the fill in order to prevent precipitation run off at the mine facilities from eroding the fill-face. A concrete tank was constructed behind this berm to permit sedimentation of silts picked up by run off in the mine yard. After the settling process, the water must pass through a 5-micron-mesh filtration manifold before being discharged into the above mentioned 72" by-pass culvert.

At this time, therefore, all natural surfaces upstream from the mine site are drained through a by-pass system past the disturbed surfaces. All drainage from disturbed areas upstream from the berm are treated for sediment removal prior to discharge into the by-pass system.

Public law 95-87 was passed in August, 1977 requiring the following additional provisions in order to prevent erosion of the fill-face and for disposal of waste rock from the mine in compacted lifts. The plan is illustrated on the attached drawings numbered 111, 112, 113, 114, and 115. These drawings show the present situation, the proposed measures to correct any potential for erosional damage from the fill, and the waste rock disposal plan.

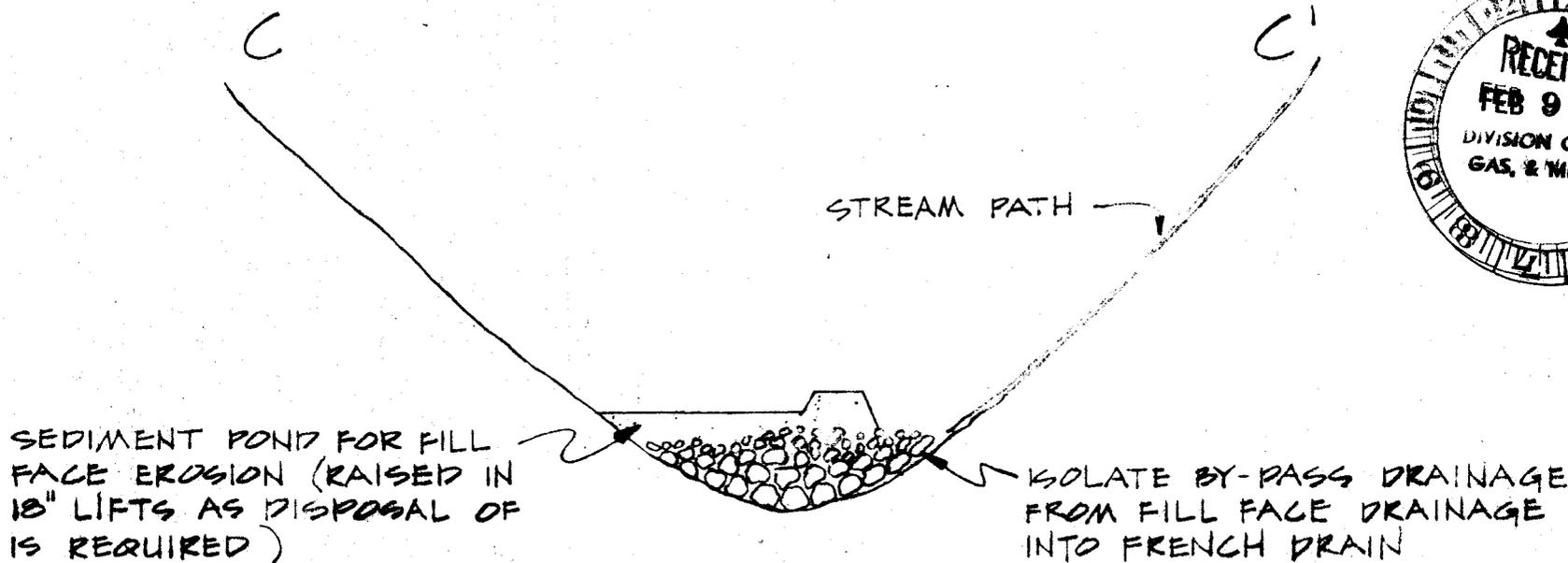
The bottom of the fill consists of large boulders which have rolled considerably further down the canyon than the finer grained material. This is due to the narrow "V" shape of the canyon bottom and the natural size segregation which has occurred during the waste rock disposal process over the years. The U.S. Forest Service considers that these boulders form a "French Drain" which also locks the fill toe into the cliff niches in the canyon bottom.

It is proposed to use the east side of this drain as a conduit for the upstream by-pass water and to construct a sedimentation pond on the west side of the top of the boulders. The outer face of the compacted sedimentation dam will be planted with erosion preventing vegetation. The abandoned dozer ramp extending from the guard shack down to the toe of the fill will be re-established to permit dozer access for the construction of the pond site and for waste disposal compaction over the life of the mine. Material for construction will be obtained from the flattened fill toe area. Additional material, which will be dumped down the face in a controlled manner, may be required to complete the construction. The pond will have an initial holding capacity of 0.5 acre feet which is 0.4 acre feet more than required under the law for the 1 acre area of the fill face. Run-off water from the fill-face will collect in the pond, solids will settle onto the waste, and the water will percolate through to the French Drain. Waste rock will be dumped down the fill-face into the normally dry bottom of the pond area and will be spread

and compacted with a dozer in 18" lifts. When the available volume is reduced to 0.2 acre feet after 0.3 acre feet of waste material disposal, the dam will be raised in keyed and compacted lifts to increase the available sedimentation and disposal volume to at least 0.5 acre feet again. The outer surface of the dam height extension will also be seeded.

It is estimated that this construction process will provide more than enough waste disposal volume for the life of the mine. It will also permit Southern Utah Fuel Company to avoid damage to the downstream bottoms of the canyons by eliminating the need for a waste disposal haulage road (which would have to come up from Convulsion Canyon) and by minimizing the required sedimentation pond dam size.

In addition to upstream by-pass water, the 72" culvert carries excess mine water discharge which is pumped up into the East Spring Canyon culvert entrance. This point source discharge is monitored for flow rate and chemical analysis. As stated elsewhere in the mining plan, additional hydrologic monitoring stations, designed by WESTEC, will be installed downstream in Convulsion Canyon.



CROSS-SECTION C-C

SOUTHERN UTAH FUEL CO.
TITLE: CROSS-SEC. FRENCH DRAIN
SCALE: 1" = 20' DATE: 1-23-79
DR. No. 115 DR. BY: S.K.S.
SHEET 3 OF 3