

March 16, 1990

TO: File

FROM: David W. Darby, Geologist *DWD*

RE: Amendment, Mining Under an Alluvial Valley Floor (AVF) on Quitchupah Creek, Emery Deep Mine, ACT/015/015, Consolidation Coal Company, Emery County, Utah, Folder 2

Synopsis

On October 27, 1989 Consolidation Coal Company (Consol) requested that the Division reevaluate the plausibility of allowing mine enteries to be placed under the Quitchupah Creek Alluvial Valley Floor (AVF). A previous request dated June 15, 1988 was denied August 22, 1988, because it was deemed to be deficient in providing "evidence indicating that damage to the quantity and quality of surface and ground water will not occur at an unacceptable risk."

Consol has asked that the Division clarify its position in regards to the last submittal and establish what additional "evidence" is necessary or required from Consol to show that damage to surface and ground water disturbance to the AVF will not occur.

Consol proposes driving three sets of six enteries through the AVF. Oversized pillars and first mining (developmental mining) methods will be conducted to ensure stability of the overburden for surface protection.

Analysis

This analysis is presented to give information to on the plausibility of mining under the designated AVF on Consol's permit area and not to reclassify the AVF. Any reclassification will need to be evaluated after a written request is presented by Consolidation Coal Company.

In the initial mine permit application received by the Division and United States Office of Surface Mining, some surface lands along Quitchupah Creek were classified as active flood irrigated croplands, which meet the criteria for AVF's under UMC 785.19. This analysis identifies the lands designated as AVF's as being flood irrigated with waters channeled in from Muddy Creek, a river system to the north. The farmlands in the vicinity of Quitchupah Creek are not subirrigated. The stream channel lies approximately fifteen feet below the farmland surface. Farming that does take place in the designated AVF areas is not exceptional or unlike farming practices in the vicinity of the permit area or adjacent areas of Castle Valley.

The AVF designation incurs exceptional constraints on the mine operator to provide evidence to ensure that an AVF area is not disrupted by mining. This has complicated both the mining and recovery potential needed by Consol to carry out an efficient mining program. The AVF classification was based on soils types and farming capabilities. The AVF designation was established for the minesite and readily accepted by the mining company to expedite the mandated permitting process based on farming potential and depositional traits. Recent opinions expressed by Consol is that the AVF classification should have been contested at the time of designation, but was accepted at the time in order to attain a mining permit and fulfill their obligation in submitting an adequate mining and reclamation plan.

Consol has been encouraged to contact the Soil Conservation Service (SCS) to have the areas designated as prime farmlands reclassified. Currently the SCS does not have a Soil Scientist on staff to reassess the sites.

An evaluation of the proposed mining method through the AVF concludes that the emplacement of entries, as proposed, should have no adverse effects to the land surface of hydrologic system. Quitchupah Creek has a limited flood plain that is restricted to a narrow stream channel with steep confining banks. No farming takes place within the flood plain. Terraces do not meet the classification for farming.

Underground mining methods using room and pillar type mining will be employed. Pillar sizing and strength calculations were submitted on June 15, 1988 which indicate that the pillars and roof span are adequate to support the overlying rock. A static safety factor of 1.75 to 2.3 was calculated. Overburden of at least 700 feet thick was calculated for the pillar sizes to be used. The extraction ratio is 0.33 for pillars 80 feet by 100 feet centers and using 18 feet enteries (Plate 3-7 from June 15, 1988 amendment submittal).

Consol has demonstrated reclamation feasibility of subsided on farmland properties over their present mine site. These areas incurred full extraction mining methods. It is anticipated that the developmental mining methods proposed for mining under the designated AVF will not result in subsidence degradation. However, if subsidence should occur, it is believed that insignificant damage would occur to the hydrologic or farming functions, resulting in negligible impacts.

Findings

An analysis of the data and information presented in the MRP and reference literature indicates there is a low probability of adverse environmental effects from mining under the AVF as proposed.

Recommendations

I recommend that approval be given Consolidated Coal Company to conduct developmental mining operations only, no pillars will be pulled, under Quitchupah Creek as proposed in their request of June 15, 1988 with the following conditions.

1. Consol will be required to establish a subsidence monitoring program to analyze any subsidence over each set of enteries.
2. Prior to development of the enteries, a network of subsidence monuments should be placed over each set of enteries. Baseline data must be collected and reviewed for accuracy.
3. Baseline information should be submitted to the Division prior to mining. The applicant must commit to monitoring monuments on an annual basis and submitting the information to the Division in an annual report.
4. Consol will be required to contact and inform the Division immediately if subsidence or any other changes occur that have an effect on the designated AVF.

dwd/DWD

cc. Daron Haddock
B Team