

March 10, 2003

TO: Internal File

FROM: Michael Suflita, Environmental Scientist III, Hydrologist.

RE: JC-3 Well Amendment, Canyon Fuel Company, Skyline Mine, C/007/005
AM03A.

SUMMARY:

On February 18, 2003 the Division received an amendment containing a description of a new well to be drilled in James Canyon. The well is designated JC-3. This Technical Analysis is a review of the Hydrologic aspects of the amendment. There are deficiencies.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Probable Hydrologic Consequences Determination

The amendment contains a new map, Plate 3.4-1, James Canyon Disturbed Area Map, which shows the location of the new well JC-3. Also included are two added pages, 3-63 (a) and 3-63 (b). The text explains the new well will be drilled in March-April 2003 and will be located at the existing well pad in James Canyon. The purpose of the well is to remove water from the mine and discharge it into Electric Lake. Water will be pumped to the lake through the existing

TECHNICAL MEMO

buried 16-inch HDPE pipe. PacifiCorp will obtain a UPDES permit and will operate the well. The mine reiterates its commitment to reclaim the entire James Canyon well site at final mine reclamation. However, it's pointed out that other arrangements might be made, suggesting that the wells may remain after final mine reclamation. In the event the situation changes and ownership of the wells is transferred, the Operator is advised that the Post-mining land use and Reclamation Plan will need to be revised. Also, the Division must approve transfer of well ownership. In the event the wells are reclaimed, the MRP addresses the procedures. See section 2.2.11, Plans for Casing and Sealing Holes.

It's noteworthy that Skyline Mine has already been granted permission to drill a total of three dewatering wells under an exploration permit issued by the Bureau of Land Management on September 25, 2001. JC-3 will be the third well drilled.

The Division has received a copy of the UPDES permit which has been issued to PacifiCorp for JC-3. It is permit number UT0025534 and is expected to be approved after conclusion of the public comment period on April 4, 2003. Because the water is being pumped from an abandoned portion of the mine, the Utah Division of Water Quality has added two requirements. First, oil and grease will be limited to 10mg/l daily maximum concentration. Second, total iron must be monitored as an indicator for other metals. No limits are set on iron. Maximum discharge flow is 5,000 gpm, Total Dissolved Solids is limited to 242 mg/l, and pH is limited to between 6.5 and 9.0.

While not stated in the amendment, the Division has been told that PacifiCorp has paid for and is installing JC-3. The cost of JC-3 is about \$3 million. Similarly, PacifiCorp has paid for upgrading JC-1 to pump 4,000 gpm and is currently providing power to operate JC-1 at no cost to the mine. PacifiCorp also intends to provide free power for JC-3. The Division contacted representatives of PacifiCorp to better understand just how they intend to operate JC-1 and JC-3. The following points summarize that operation.

- JC-1 began pumping on September 16, 2001 at about 2,100 gpm. On October 14, 2002 JC-1 pumping increased to about 4,100gpm.
- JC-3 will begin pumping about May 1, 2003 at a rate no greater than 5,000 gpm.
- JC-1 and JC-3 will continue to pump water into Electric Lake until repairs are made to prevent or minimize leakage out of Electric Lake. It's not known when those repairs will be completed.
- Over the long term, the pumps will be turned off during years of normal precipitation. The groundwater would not be needed and power costs would be avoided.
- During drought years the pumps will be turned on to provide water for cooling the Huntington Power Plant.
- It was essential that JC-3 be completed and operational by May 1, 2003 or serious power interruptions would result at the Huntington Plant.

- Given the above conditions, PacifiCorp will want to continue operating JC-1 and JC-3 after Skyline Mine has completed their operations and reclaimed the mine.

The Division also contacted representatives of Skyline Mine and learned that pumping JC-1 and JC-3 is not necessary for operation of the mine. While they do benefit from the pumping by not needing to pump as much water out of the mine into Eccles Creek, they are basically assisting PacifiCorp by accommodating pumping of JC-1 and JC-3.

In reviewing this amendment the Division must distinguish between Skyline Mine and PacifiCorp from a regulatory and a permitting standpoint. Skyline Mine holds the permit to mine coal and is therefore, the Permittee. As such, they are regarded as owners of the wells regardless of all other considerations. Similarly, the mine holds the exploration permit allowing the drilling of three wells. From a regulatory standpoint, PacifiCorp is likened to a contractor engaged by the mine to do other work in the mine permit area and the mine disturbed area. Until transfer of ownership of the wells occurs, the Division must look at the situation in this perspective. Skyline Mine remains responsible for the hydraulic impacts due to pumping their wells in their permit area and removal of water from their mine.

While JC-3 is operating in an abandoned portion of the mine, the rest of mine is still operational, and hydraulically connected to the abandoned portion. Further, the Submains are being kept operational in anticipation of returning to mine the Flat Canyon Tract in 2009. The water inflows to the mine are record setting in size. The concerns for impacts to the Hydrologic Regime have been, and remain, at a high level. These concerns do not change because PacifiCorp is now deciding when water is being pumped out of that hydrologic regime. Therefore, the mine must revise their Probable Hydrologic Consequences (PHC) section of their MRP to reflect the continuing operation of JC-1 and JC-3. Further, the monitoring of pumped quantities and monthly reporting of those quantities to the Division that is currently being done for JC-1 must also be done for JC-3. Regulations also require that the depth of all water wells be provided. JC-1 pumps water from a fault or fracture while JC-3 pumps water from the mine workings. Together these two wells are expected to pump at least 8,000 gpm continuously from the groundwater. That converts to 12,904 Acre-Feet, or 44% of the working volume of Electric Lake, every year. These are significant extractions of groundwater. The potential impact to the groundwater regime will need to be considered in the PHC.

The Utah State Engineer, Jerry Olds, and Director of Natural Resources, Robert Morgan, have pointed out to the Division that all groundwater is considered to be tributary to surface inflows. That is, all groundwater is derived from surface waters. While not regulated by the Division of Oil, Gas, and Mining, the Operator is hereby advised that it may be necessary to obtain water rights to cover waters being pumped from JC-1 and JC-3.

Previous Technical Analyses by the Division, and Progress Report No. 2, by Hydrology Consultants, Inc. (HCI) both describe Skyline Mine as being non-typical of coal mines in Utah. That report indicates, "Groundwater inflows to other coal mines in the Wasatch Plateau and

TECHNICAL MEMO

Book Cliffs have been characterized as highly compartmentalized. Although there is definitely strong structural control of groundwater flow in the Skyline Mine area, measured changes in water levels over relative large areas suggest the groundwater system might not be as compartmentalized as at other mines in the Wasatch Plateau..." Records indicate that from January 1999 to the end of February 2003, 32,341 Acre-Feet have been pumped out of the ground to relieve water inflows to the mine. During the last 14 months the pumping rate has been 17,715 Acre-Feet per year, or 59% of the working volume of Electric Lake, every year.

It's clear that the Skyline Mine operation, in the unique geologic conditions surrounding the mine, has resulted in very difficult mining conditions. In addition, considerable concern has been generated for possible mining impacts to the groundwater and to Electric Lake. The Division is concerned that continued mining in the Flat Canyon Tract will result in groundwater extractions similar to those encountered so far. Indeed, the potentiometric surface increases to the west in the Flat Canyon Tract and water inflows may be greater than those already encountered. It's possible that in this particular location, over a long period of time, coal mining may not be possible without causing material damage to the Hydrologic Balance. Such material damage has not yet been found, and the mine is withdrawing from mining in the area over the next year. However, the Division is concerned about the impacts of continued mining in the Flat Canyon area.

Findings:

The amendment does not meet minimum regulatory requirements. Accordingly, the permittee must address those deficiencies as found within this Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

- R645-301-728**, 1) Revise the Probable Hydrologic Consequences (PHC) section of the MRP to reflect the continuing operation of JC-1 and JC-3, 2) Monitoring of pumped quantities and monthly reporting of those quantities to the Division that is currently being done for JC-1 must also be done for JC-3, and 3) Provide the depth of all water wells.

RECOMMENDATIONS:

Do not approve the amendment in its present form.