

fore this committee would help all concerned achieved, with Federal assistance, the greater understanding that is vital to solution of the overall problem.

If we were talking about almost any other type of industrial activity, we could suggest relocation to more favorable working areas of the country. Coal mining operations, however, must be carried on where coal is found, and under the environmental conditions prevailing in and around each mine. And, the technology of mine drainage control and prevention, as it is developed, must match each of the assortment of existing conditions we find throughout the coal regions of the Nation.

NO SINGLE APPROACH TO THE PROBLEM IS POSSIBLE

Abandoned mines give a curt answer to those who think the simple way to stop mine drainage is to stop mining. Acid mine drainage is largely a postdated problem. Some authorities estimate that 3.5 million tons of acid equivalent is discharged annually from coal mines, and of that up to 90 percent originates in abandoned mines. That condition is a byproduct of industrial booming that put a priority on an adequate supply of energy fuel. Stream conservation is an exercise in national hindsight. The opportunity for timely prevention or control of acid mine drainage, therefore, has been lost at many abandoned mines, leaving only the costly and technically formidable alternative of discharge treatment. Current coal operators cannot be blamed for that historical mistake. They are diligently searching for ways to make sure they do not repeat it.

Sealing abandoned mines has produced mixed results. Mines below the natural drainage level have been allowed to flood completely, thus sealing off oxygen from acid-forming materials. Flooding an abandoned mine, however, can threaten flooding of adjacent active mines in many cases. Mining regulations then call for pumping the water out of the abandoned mine. Continuous pumping of the drainage may sometimes reduce the acid load—it would avoid the discharge of big “slugs” of acid water to receiving streams and give natural neutralization time to work—but it raises economic and legal questions. Many abandoned workings are orphan mines or public charges.

Water sealing, of course, will not work at mines above drainage. For them the theory that has intrigued researchers for years is air sealing. Isolated successes for air sealing have been reported since the 1930's by researchers for the U.S. Bureau of Mines, West Virginia University and the U.S. Public Health Service, Pennsylvania's Department of Mines and Mineral Industries constructed almost 1,000 mine seals in the late 1940's, and the coal industry—through the Coal Industry Advisory Committee to the Ohio River Valley Water Conservation Commission—sponsored a mine sealing project at Kittanning, Pa., with the Bureau of Mines. Knowledge of the permanent effects of mine sealing are still sketchy, however, and not all authorities agree it is the answer sought. As late as 1962, for example, Dr. S. A. Braley, working under a Mellon Institute fellowship supported by Pennsylvania, BCR, the National Coal Association, and other coal groups, reported that mine sealing was apparently not effective in reducing acid discharges from drift mines.