ABANDONED UNDERGROUND MINES

By

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Last summer, in EPA's Office of Environmental Engineering, we began a detailed, analysis of our control technology development programs to assure that they were responsive to the requirements of the recently amended Federal Water Pollution Control Act. As most of you know, the 1972 Amendments to the law set some very ambitious water quality goals for the Nation and provided some substantive legal tools and a very demanding schedule for achieving these goals.

This far-reaching legislative mandate put EPA's water quality control programs into high gear and caused us to examine our R&D activities very carefully to determine where we could produce the greatest water quality benefit from our research dollars. Because these benefits were likely to result from actions taken under this new water law, our main objective was to impact its implementation as effectively as we could with our research activities.

One of the areas we examined was the mine drainage problem, specifically from abandoned mines. I think we all recognize that acid drainage from abandoned coal mines in the eastern United States is one of this country's most significant water qua1ity problems. It is a persistent and visible reminder of the lasting consequences of shortsighted self-interest, where one man's immediate gain is society's continuing loss.

Mine drainage from abandoned mines is also a problem begging for action, but seeming to defy solution. There's nobody around to blame for the problem or, through legal action, to force to redress its ills. Technical solutions are only partially effective and often very costly. If there is one thing upon which we can agree, it's that we do not have available a set of simple, broadly applicable control systems which have a cost within the range our society appears willing to pay.

Thus the abandoned mine problem would seem to be an ideal candidate for a sizeable research response - a major, national water quality problem without a currently satisfactory solution. Indeed, its a ready made situation for a bureaucrat to exploit in justifying an expansive research program. In recognition of this, we have had considerable pressure over the years to expand our research effort on this problem. Most recently we have been criticized by the General Accounting Office for not committing tens of millions of dollars to this effort.

Underlying all of this concern and pressure to "do something" is the fact that acid mine drainage is also one of the earliest recognized water pollution problems and the focus of research activity for decades. Indeed, we have made a lot of progress towards solution of the problem. With the assistance of some in this audience, we've developed more effective and cheaper bulkhead seals. We've developed ways of controlling surface water in order to reduce acid

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drainage. We've cut the cost of treatment technology. We've also debunked a few traditional approaches, such as air seals. In fact a lot of very competent people have put considerable effort over the years into trying to come up with more effective solutions to the problem.

In view of this background of concern and activity, where do we stand today? We made a few assumptions and some rough calculations and concluded that with technology currently available and likely to be available within a few years we could probably eliminate, permanently, about half of all acid drainage from abandoned mines in the eastern U.S. through sealing, surface water control and similar processes. Total costs are hard to estimate accurately but they would likely fall somewhere between one-half and one billion dollars.

The other half of the problem could be corrected only by means of treatment, which would be a massive effort of continuing and what we assume to be intolerably high cost, as well as of questionable practicality of implementation.

From this, we concluded we don't have satisfactory solutions available. The next question we asked was where we could put our research dollar to get us out of this uncomfortable dilemma. Frankly we didn't come up with any satisfactory answers to this question either.

For this reason, we are here today. Although we know that we in EPA have some of the best experts in the business: Ron Hill, Gene Harris and Elmore Grim and others in our Cincinnati research center, we felt this problem was of sufficient importance that we didn't want to trust it exclusively to our own judgment. In discussing how to seek the advice of others, Ron Hill suggested this meeting today.

What we are seeking here today is your advice on where we should be going in our abandoned mine research program. Are our assumptions as to what technology is currently available correct? What are the constraints limiting the implementation of technology available today? Have we exhausted the more obvious technical approaches to new solutions? Where are the potential breakthroughs in cost or effectiveness? Are these the type of breakthroughs that can be stimulated by Federal research dollars? Can we, for instance, use the "energy crisis" and the rising demand for coal to recover the remaining coal in areas of abandoned mines while simultaneously correcting the abandoned mine drainage problem? Where should we put our Federal research dollar, realizing that we have limited funds to spread over a seemingly limitless number of problems and there are many areas where we can derive a high pay-off from a few dollars? For instance, would we be better advised to cut back on abandoned mine research and concentrate on ways to plan, operate and close-down mines so that we don't increase the abandoned mine problem in the future?

These are very important questions for which we don't have satisfactory answers. We're here today to seek your counsel. We're very pleased you have come to participate and we look forward to a frank and constructive session.