REPAIRING THE LAND: THE ABANDONED MINE LANDS PROGRAM

In his continuing quest for coal, man has disturbed and then abandoned more than 1.1 million acres of land in the United States—much of it in Appalachia. While OSM's performance standards and uniform enforcement will insure that the disturbed, and then abandoned mine land syndrome becomes a thing of the past, Title IV of the Act—the Abandoned Mine Lands Program—offers a unique solution to remedying many of the more serious problems included in this legacy of poor mining practices. The solution comes through the Abandoned Mine Reclamation Fund, financed through a fee levied on all active coal mining operations.

Any lands mined and then abandoned or left inadequately restored or reclaimed prior to Aug. 3, 1977 are eligible for assistance through this fund. Estimates for reclaiming the lands and waters adversely affected by poor mining practices over the years have run as high as $25 to $30 billion.

Top priority projects are those which are active hazards to public health and safety. These conditions include unsafe impoundments or wastebanks; subsidence in urban areas; mine or wastebank fires adversely impacting urban areas; and mine drainage discharges that degrade potable water supplies.

Without reclamation this abandoned coal mine site near Columbia, Mo., takes on an almost prehistoric cast. The AML Fund will pour in $2.5 million to reclaim the 14-acre acidic lake and surrounding acreage to halt drainage that has already caused a record fish kill in neighboring waters and has become a health hazard for recreationists.

THE AML FUND

This Abandoned Mine Reclamation Fund—or AML Fund—finances State, Indian, and Federal reclamation programs to rectify adverse effects of previous coal mining. The Act established a fee scale of 35 cents per ton of coal produced by surface mining; 15 cents per ton for underground mining; and 10 cents per ton for lignite, or 10 percent of the coal's value at the mine and 2 percent of the lignite's value at the mine, whichever is lower.

First fees were due Jan. 30, 1978, for the fourth quarter of 1977, and by the end of FY 1979, the fund had collected more than $290 million. Fifty percent of this was allocated to States and Indian lands based on the total fees collected in each State and applicable Indian lands. In FY 1979, $61.4 million was appropriated, and $33 million obligated. Unappropriated and unobligated fund balances remain available until appropriated or obligated.

In addition to coal industry reclamation fees, the fund may receive donations of charges imposed for use of unreclaimed land, and certain other monetary recoveries. Except for a minor amount of interest or late fee payments, these sources did not contribute to the AML Fund during the period of this report. Fund expenditures are approved in advance through the budgetary and appropriations process of the Executive and Legislative Branches.

HOW THE AML FUND IS USED

The AML Fund may be used for Federal, State, and Indian tribe programs to:

- Reclaim and restore land and water resources adversely affected by past coal and other mining;
- Seal or fill abandoned underground mine entries and voids;
- Plant land adversely affected by past mining to prevent land erosion and sedimentation;
- Restore streambeds to prevent flooding;
- Abate, treat, and control water pollution created by acid mine drainage;
- Abate and control burning coal refuse areas and in situ mine fires;
- Abate and control mine subsidence;
- Conduct research; provide technical assistance and carry out demonstration projects;
- Finance administrative expenses of State, Indian, and Federal Reclamation programs, including fee collection and inventorying abandoned mine lands;
- Finance a program of special assistance to small coal mine operators, up to a maximum of 10 percent of fund revenues, but not more than $10 million per year.

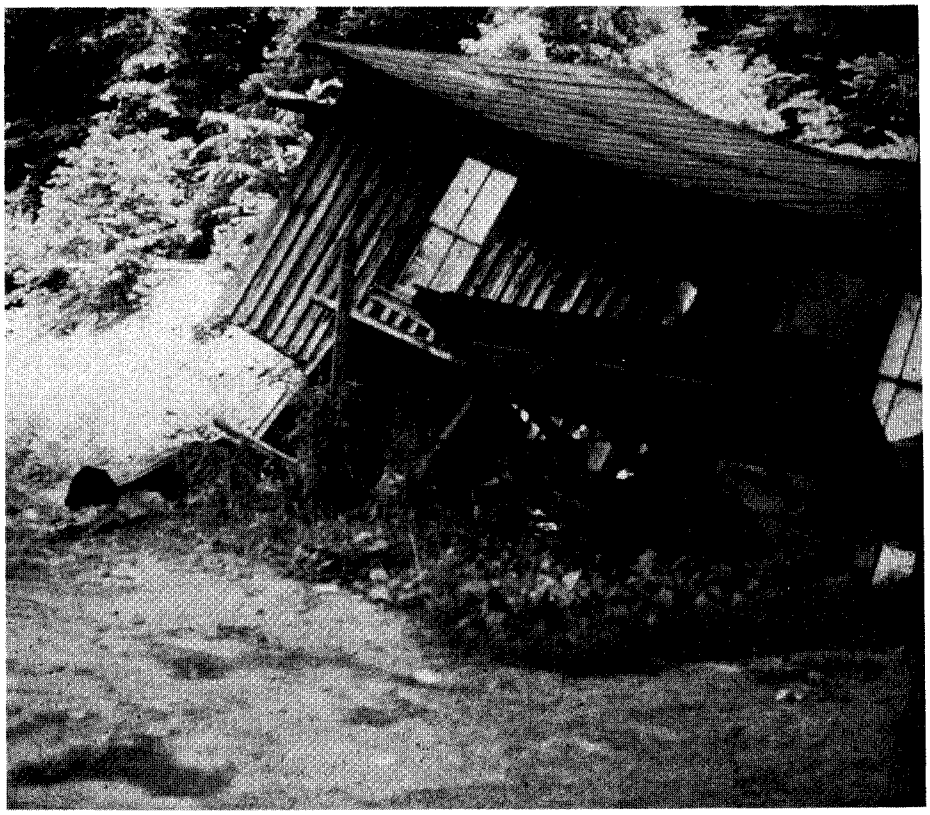
FEDERAL, STATE AND INDIAN RECLAMATION PROGRAMS

To be eligible for the AML Fund, a State or Indian tribe first must have an approved regulatory program as well as an approved reclamation plan. This reclamation program must consist of a reclamation plan plus an annual work plan for reclamation of its abandoned mine lands. Each entity—State or tribe—with unreclaimed coal mine lands then can receive up to one-half of those reclamation fees collected from its area to fund reclamation projects under its approved plans.

FEDERAL PROJECTS

Because no State or tribe by the end of 1979 had secured program approval, none received monies directly from the AML Fund in 1979. Until State or Indian reclamation plans are approved, all reclamation work will be carried out as Federal—Interior—projects, or through the Rural Abandoned Mine Program (RAMP), administered by the Department of Agriculture. In FY 1979, OSM completed work on 18 high priority projects and 24 emergency projects. Another 12 high priority and three emergency projects were funded and under construction at the end of this reporting period. At the end of 1979, OSM was processing 132 high priority projects. All of these projects are listed on pages 56 - 62 .

Reclamation project review and selection goes on continuously. Potential projects can be nominated by interested individuals or public service group as well as other State or Federal agencies. When a project is proposed in this manner, however, OSM will consult with appropriate State reclamation agencies to determine support for the project as well as with other Federal and State agencies to avoid duplicating their efforts.



RURAL ABANDONED MINE PROGRAM (RAMP)

The Act includes provisions for a program solely designed to reclaim soil and water resources of rural lands adversely affected by coal mining. Up to one-fifth of the money deposited in the AML Fund annually can be transferred to Agriculture for use in the RAMP. Appropriations available to RAMP for FY 1979 were about $14 million.

The RAMP applies to previously mined land in 29 coal-producing States. Its workload will be determined by the number of farmland owners or users willing to share reclamation costs.

RAMP OPERATIONS

The RAMP kicked off on Oct. 2, 1978, with publication of its final program regulations. A national interim program manual was issued in December 1978, followed by program training for Soil Conservation Service (SCS) State and field office staffs in 350 counties within 29 States.

In January 1979, an information kit with a narrated slide show, program brochures, and press package was distributed to all SCS State offices to help them solicit program applicants. This effort brought in 2,533 RAMP applications, covering approximately 100,000 disturbed acres of land and water in 21 States.

Of the total applications submitted, 497 were classified as extreme danger (Priority I); 815 as adversely affecting public health and safety (Priority II); and 1,221 as adversely affecting the environment (Priority III). To date, approximately 300 high priority applications have been screened by State reclamation committees which included representatives from OSM, State agencies, and the public. Another 30 applications were referred to OSM and/or State reclamation agencies for funding under the extreme danger provisions of the law.

SCS signed 63 long-term (5-10 year) contracts in 13 States from June through September 1979, obligating about $6.4 million. The

planned reclamation treatment was underway at the end of 1979. However, uncertainties about the tax status of the Federal cost-share payments under the program exist, i.e. the Revenue Code of 1978 authorized the Secretaries of both Agriculture and Treasury to develop a process for excluding those payments from gross income for Federal tax purposes.

STATE AND INDIAN PROGRAMS

Even before a State's regulatory program has been approved, however, a State or tribe can get advance funds earmarked for them from the AML Fund. This money can be used by the State or tribe to initiate the necessary planning to develop its individual abandoned mine reclamation programs.

In FY 1979, 14 States and one Indian tribe received these advance funds—totalling $2.8 million—through individual cooperative agreements with OSM. Three additional agreements should be finalized by the time this report is published.

Some of the uses planned for these monies include:

- compiling a general description of the reclamation activities ultimately to be conducted with money from the AML fund;
- helping to identify lands, rivers, lakes, streams, and water tables adversely affected by past mining practices and not fully reclaimed;
- providing OSM with descriptions of problem areas, relating proposed reclamation to land-use planning, and compiling detailed information on the socio-economic and environmental impacts of abandoned mine lands on neighboring communities.

This information also will help OSM develop a national priority reclamation program, as well as to assist the SCS develop RAMP.

A complete breakdown of States and tribes receiving advance AML funds is on page 53.

Development of State and tribal AML programs was running smoothly at the end of 1979. One State—Oklahoma—submitted its reclamation plan in November 1979.

Noxious fumes and threat of flooding from unstable coal mine embankments pose a constant peril to the residents along Peach Creek near West Logan, W.Va. In 1979, OSM provided $2 million through the AML Fund to check this menace to health and safety.

ANNUAL WORK PLAN

A proposed amendment to the AML rules, published in the *Federal Register,* Sept. 10, 1979, proposed funding States and tribes to develop their first annual work plan for specific reclamation projects. Once this rule is finalized, OSM expects that all State and Indian tribes preparing reclamation plans will request these funds to expedite their initial work plans.

INDIAN STUDY

The study of surface mining regulations on Indian lands particularly by the 25 coal-owning tribes through the Council of Energy Resources Tribes (CERT)—now published in draft form—will be a key document in drafting legislation for reclamation of Indian unreclaimed coal mined lands. By the end of FY 1979, the AML Fund held approximately $5.9 million in allocations for Indian reclamation activities.

MODEL RECLAMATION PROGRAM

An analysis of how States and Indian tribes can develop abandoned mine reclamation plans to comply with provisions of the Act was widely distributed in FY 1979. The model plan—developed by an engineering consulting firm under a $96,000 contract with the Appalachian Regional Commission (ARC) and OSM—incorporates ideas submitted by States and Indian tribes as well as the expertise of reclamation specialists in OSM, the ARC, and SCS.

RECLAMATION GUIDELINES

Proposed guidelines covering reclamation standards for Federal reclamation projects and to help States and Indian tribes develop their own AML plans were published Nov. 6, 1979. OSM scheduled six public information meetings on the proposals, in affected areas such as Alcoa, Tenn., and Charleston, W. Va., in order to involve as many interested parties as possible in development of the guidelines.

DRAFT ENVIRONMENTAL STATEMENT

A draft environmental statement (DES) for implementation of program policies for Federal, State, and Indian AML reclamation was issued Nov. 5, 1979. In the DES, OSM considered five alternatives for the use of Federal discretionary funds

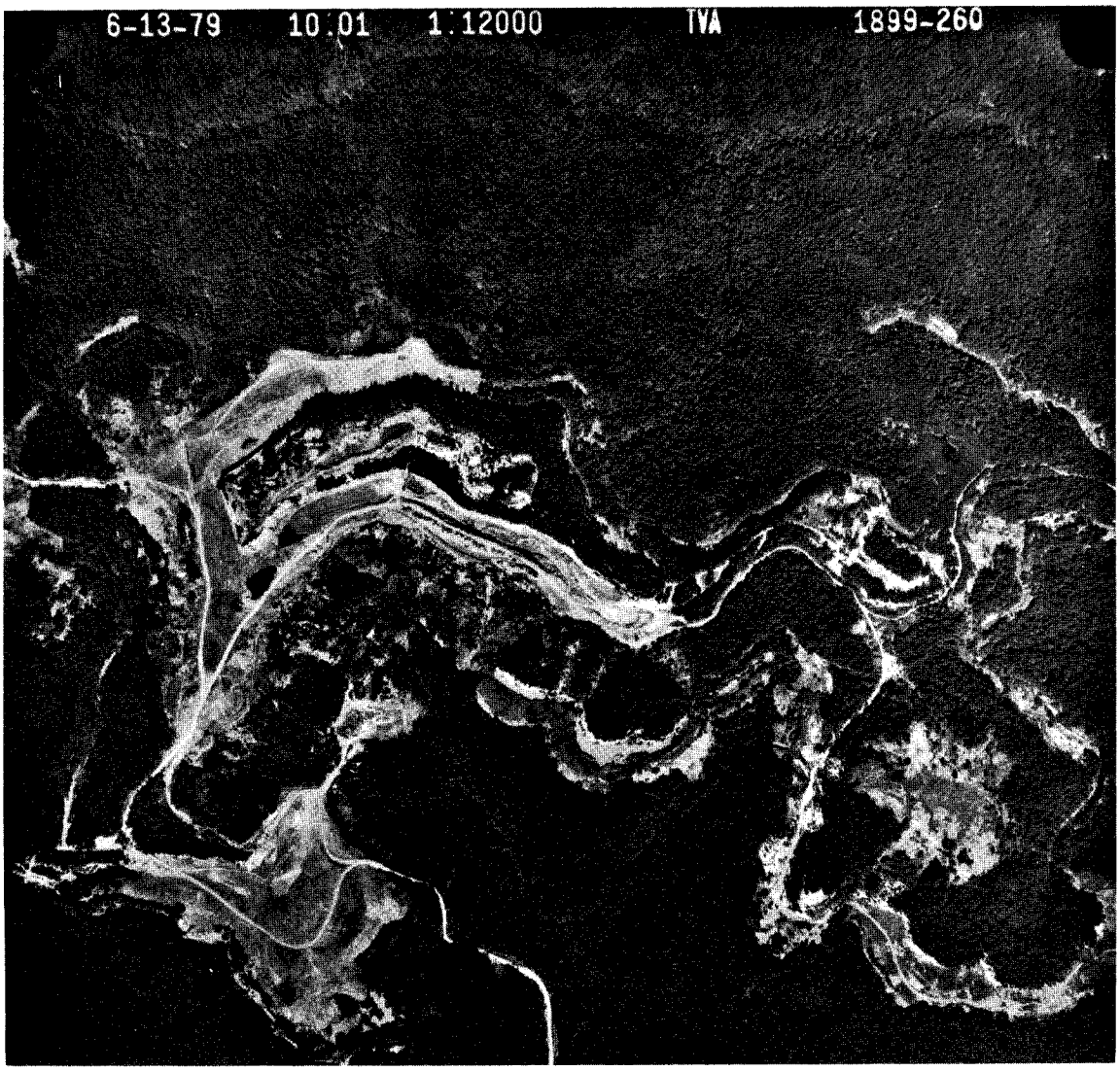
and three alternatives for reclamation guidelines to be adopted under the Act. The "preferred alternative" for Federal funds allocation would concentrate monies in those areas with the most severe land reclamation problems, affecting the most people. The "preferred alternative" for reclamation guidelines would be goal-oriented. Other alternatives for Federal funds allocation are: to take no action at all; to allocate funds based on the State or tribe's share of the national historical coal production; or to allocate funds based on each State's or tribe's share of the national reclamation problem. Alternatives on the guidelines included having no reclamation guidelines or detailed reclamation guidelines. Hearings on the DES were held in late November.

ABANDONED MINE LAND INVENTORY

The Act requires OSM to identify and reclaim abandoned coal mines and lands or waters affected by past coal mining processes. To carry out this responsibility, OSM began developing a national inventory of abandoned mine lands and associated problems. This inventory is intended primarily to assist OSM headquarters and regional offices, States, and tribes in determining priorities, plans, schedules, and budgets for the reclamation of abandoned mine lands.

During 1979, several key tasks toward making this national inventory a reality were accomplished. In March 1979, a memorandum of understanding between OSM and the Department of Energy's Oak Ridge Laboratory established a program to design and develop the inventory. Initial tasks involved collecting and evaluating all existing information relevant to abandoned mine land problems. During the year, 25 States and one tribe agreed to prepare bibliographies of existing AML information. This information was to be combined with data acquired from Federal agencies to complete an interim inventory by the end of the year.

Another inventory effort was the development of final design specifications, including preparing data collection guidelines for States and tribes. During July 1979, OSM regional officers met with States on the scope and design of the inventory. During September and October, these regional meetings were repeated—this time to define and identify what data variables would be collected for the inventory. Such close coordination between OSM regions and States is expected to produce an inventory that will have maximum utility at all levels. Also during October 1979 model cooperative agreements were prepared to initiate State and Indian tribe participation in new data collection for the final inventory.



THE BIG PICTURE provided by high-altitude photography has proved an invaluable tool in assessing the success of the initial regulatory program.

Increased coal production must be tempered by environmentally sound methods of mining. In turn, this principle, underlying the Act and emphasized repeatedly by President Carter, needs to be translated into action by vast research and development in mining and minerals technology. Scientists on OSM's research staff are looking for some of these answers. Its technical information specialists are developing sophisticated means of cataloging and disseminating their research so that it may reach those for whom it is intended—the American people.

MINERAL INSTITUTES

In Title III of the Act Congress provided the mechanism to train some of these future mining experts and fund their research as well. Title III authorizes Federal funds for establishing State Mining and Minerals Resources and Research Institutes (MMRRIs) to enhance educational mining and mineral sciences programs within the States. The law envisioned one such institute in every State to "conduct competent research, investigations, demonstrations, and experiments of either a basic or practical nature, or both, in relation to mining and minerals resources and to provide for the training of mineral engineers and scientists. . . ."

Today, 22 States have these mineral institutes. Each of them is funded to develop the capability of the mineral institute; provide scholarships, graduate fellowships, and postdoctoral fellowships, and to conduct mining and minerals resources research.

ALLOTMENT GRANTS

During FY 1979 OSM awarded $110,000 to each of these institutes as an allotment grant. Together with matching funds from their State, each has used this Federal assistance to enhance and improve their scientific facilities or programs. More diverse courses and training in mining and mineral resources are now available at these schools due to this unique program. Each institute determines how its allotment can best be used to fulfill its particular needs. Some of these were used to acquire additional scientific and teaching equipment, to add faculty, to apply administrative support for the program, and to fund "mini" research projects.

SCHOLARSHIP AND FELLOWSHIPS

Scholarships and fellowships, too, are available to each State mineral institute. These funds will increase training opportunities for individuals in such fields as mineral resources and mining engineering. Initial grant agreements to the mineral institutes were signed in September and November 1978 for a three-year period ending Sept. 30, 1981. They shared $3,520,000—or $160,000 each.

By Oct. 1, 1979, 462 scholarships, graduate fellowships and postdoctoral fellowships—totalling $1,185,000—had been awarded. The number of students receiving these fellowships or scholarships varies from a few students at some institutes where the program is just getting off the ground to about 60 recipients at other schools. More than 50 percent of the awards were in undergraduate level courses to encourage recipients to continue in their chosen mineral resources field.

RESEARCH GRANTS

The research grants called for in the Act were awarded by OSM for the first time in FY 1979. These grants can fund the tools to be used by mineral institute-trained scientists in developing future mining technology. This year, 51 separate research grants were awarded. Those selected—from 372 projects submitted—met the criteria of having industrywide application and at the same time supporting the mission of the Department of the Interior. In FY 1979, a total of $2.73 million was awarded to the mineral institutes as research grants. This research will be conducted in 11 topical areas, including mine development, supply and demand, economic, legal, and social aspects, exploration, and minerals research. A complete breakdown of all these areas with funding for each appears on page 67 of this report. These proposals were rated by peer review panels, with final selection by top OSM officials—including Director Walter N. Heine.

ADVISORY COMMITTEE

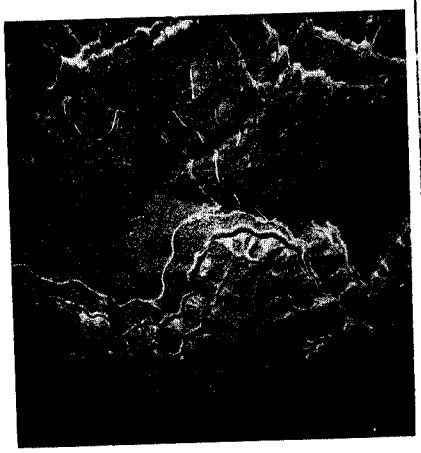
As an added resource for the Secretary, the Act called for an Advisory Committee on Mining and Minerals Resources Research. This Committee provides guidance and recommendations to the Secretary and OSM, including the procedures that were followed in requesting research proposals from the mineral institutes. Additionally, the committee advises OSM on the selection of peer panel reviewers for evaluating the research proposals received from the institutes.

During 1979, the committee met three times: Jan. 16, 1979, May 15, 1979, and Nov. 20, 1979.

Members of the Advisory Committee are:

Dr. Elburt F. Osburn, Chairman, representing the National Academy of Engineering
Dr. James R. Balsley, representing the U.S. Geological Survey
Dr. Robin Brett, representing the National Science Foundation
Dr. John Morgan, representing the Bureau of Mines
Dr. Donald Dahlstrom, representing the National Academy of Sciences
Mr. Donald Calloway, representing coal mine workers
Mr. Richard Holsten, representing industry
Ms. Carolyn Johnson, representing environmental interests
Dr. Fun-den Wang, representing higher education

APPLIED RESEARCH



Short-term projects aimed at solving problems related to the environmental performance standards are the crux of OSM's applied research program. As each is completed, its results are expected to better enable industry, State and Federal inspectors to reach a more uniform interpretation of the regulations and to determine whether or not an operation is in compliance. Other projects will provide training tools for inspectors, both Federal and State, in theory and practice of a particular regulation. Long-term, more complex research projects take place through cooperative agreements with other agencies, such as the Bureau of Mines, U.S. Geological Survey, the Environmental Protection Agency, and the U.S. Department of Agriculture. In FY 1979 the program included the following:

AERIAL PHOTO SURVEILLANCE: Photographic reconnaissance is provided by the Tennessee Valley Authority (TVA) to supplement and assist inspection and enforcement activities in the Appalachian coal region. This photo coverage of both active surface and underground mines is being used to measure the success of the program by monitoring compliance with the initial regulations. Areas of concern and examination on the low-altitude photography include backfilling and grading, sediment control, topsoil storage and placement, success of revegetation, and environmental problems dealing with landslides, acid water discharge, dams and downslope spoil placement. Both 1:12,000 and detail enlargements at 1:500 scale are being analyzed and interpreted on an as needed basis. (Department of the Interior, TVA: $250,000)

FEDERAL HIGH-ALTITUDE PHOTOGRAPHY PROGRAM: Twelve Federal agencies (including OSM) have joined forces in an agreement with the U.S. Geological Survey to provide high-altitude photography of the continental United States. This coordinated effort resulted in a program that is expected to obtain high resolution black and white and color infrared photography over a 3-year period. Priority areas in each coal basin will be covered to meet OSM needs through photo center quadrangle map images for precise location of all disturbed surface areas through the detection, inventory, and monitoring of the surface effects in all mine areas. (Department of the Interior, USGS: $95,000)

HYROLOGIC HANDBOOK: A handbook for small mine operators with emphasis on reclamation techniques which preserve and enhance water quality and quantity will be developed. (OSM, the University of Delaware: $95,000)

INDEX TO WATER DATA ACQUISITION: The USGS will prepare an index of availability of water resource data to assist persons involved in developing, managing, and regulating the Nation's coal resources. (OSM, USGS: $75,000)

ENVIRONMENTAL IMPACT OF PL 95-87: An analysis of hydrologic data to determine the impacts of surface coal mining prior to and following passage of the Act is being performed. The study will focus on the New River in Tennessee. (OSM, University of Tennessee: $99,852)

HYDROLOGIC MONITORING: This hydrologic study will evaluate the efficiency of rock cores to ease water flow through valley and head-of-hollow fills. Emphasis will be placed on identification of core boundaries, voids, water content of fill, sediment clogging of the core, and impacts of diversion ditch construction around fill sites. (OSM, EPA, Skelly and Loy, $200,000)

GROUNDWATER MOVEMENT AND CHEMISTRY: This entails acquisition of detailed hydrologic data in a three-county area of Southwest Indiana. (OSM, Indiana University, $12,675)

FISH AND WILDLIFE MONITORING PROCEDURES: The end result of this study will be a manual of technical information and guidelines for appropriate monitoring procedures for identifying the impact on wildlife (fish, wildlife, invertebrates, etc.) and their habitat of surface mining, including the best technology available for the protection of migration of wildlife and associated habitat. The prospective audience includes coal mine operators, fish and wildlife agencies, land management and academic institutions, and private landowners. (OSM, U.S. Fish and Wildlife Service, and Science Applications, Inc.: $57,000)

PLANT MATERIALS: This study to identify, evaluate, and propagate plant species suitable for permanent vegetation in a heavily-mined area is expected to produce guidelines for the techniques used to seed or plant the species selected. (OSM, SCS: $92,000)

FUGITIVE DUST EMISSION FACTORS: This project is to develop air pollution emission factors for fugitive dust sources at surface coal mines by measuring dust emissions from mining sources and to evaluate selected control practices. The project will determine the total suspended particulate impact from these sources. (OSM, EPA, PEDCO, MRI: $98,000)

AIR MODEL ANALYSIS: This study will examine the existing dispersion models used in predicting fugitive dust concentration downwind of surface mining operations. Selection of the best model available and an indication of information needed for more accurate model development will be included. (OSM, PEDCO: $33,000)

VALLEY FILL MONITORING: This project involves testing and analyzing geotechnical data for establishing criteria required for pre-construction foundation analysis at valley and head-of-hollow fills and to monitor the stability of the placed fill. (OSM, Skelly and Loy: $65,000)

INFORMATION TECHNOLOGY

When fully developed, OSM's Catalog and Data Center, authorized by the Act, will provide technical information support to the public and to Federal, State, regional and local agencies engaged in surface mining and reclamation activities. The center will hold files on mining and mineral resources research projects—both completed and in progress by OSM as well as other agencies.

OSM now is studying its information requirements at both headquarters and regional offices. This information—required to support both Federal programs and the oversight of State regulatory programs—will shape the development of OSM's future information and data systems.

MINE PERMIT DATA. Development of a prototype system for compiling and comparing mine permit applications data from the State files of Illinois, Indiana, and Ohio. OSM hopes to determine the feasibility of a computerized system for evaluating local and regional mine permit data and the environmental impact of reclamation alternatives.

SATELLITE TECHNOLOGY. Study of the strategies, techniques, and procedures for monitoring surface coal mining activities by using LANDSAT satellite technology to evaluate the progress of mining, acreage disturbed, and the establishment of vegetative cover, as well as, for the determination of lands unsuitable for coal mining operations.

VEGETATIVE COVER. Analysis of the capability of existing information systems to support reclamation research on re-establishing or enhancing vegetative cover in areas affected by coal mining, as well as, for the designation of lands unsuitable for coal mining operations.

ENVIRONMENTAL ABSTRACTS. Collection, abstraction, and organization of current literature and research on the environmental impacts of coal mining operations and reclamation.

ABANDONED MINES. Identification and review of current resource technology, in both private and public sectors, applicable to developing OSM's inventory of abandoned mine lands, including such techniques as satellite photography, aerial photography, and existing records.

INSPECTION AND ENFORCEMENT. Development of a system to provide statistical and civil penalty cases tracking information on the Federal surface mining and reclamation inspection and enforcement programs.

FEDERAL LANDS MINE PERMIT TRACKING SYSTEM. Development of a monitoring system to indicate the status of applications for mine permits on Federal lands.

RECLAMATION FEE COLLECTION SYSTEM. Development of a system for managing collection of OSM's reclamation fees. Work includes feasibility studies for refining this system to establish local relationships between the controlling companies, the coal mining operating companies, and the permittees, as well as to determine the accuracy of coal production tonnage. It is planned to coordinate OSM reporting requirements with those of the Department of Energy and the Mine Safety and Health Administration (MSHA)

AUTOMATED DATA PROCESSING (ADP) STUDIES. Establishment of an ADP sharing agreement with the Department of the Interior's Office of ADP and Telecommunications Management and the USGS's Division of ADP to use the Department's Washington Computer Center as OSM's primary automated data processing facility. This facility will provide OSM with the capability to accomplish its information system processing.

MANUAL STUDIES. Installation of basic and essential paperwork management and compliance systems during 1979 includes a records management system, a forms management program, a directives systems, and Federal Reports Act review activities by the General Accounting Office (GAO) that covered more than 320 reporting requirements. These management systems are designed to improve OSM operations and assure compliance with government-wide requirements.

TECHNICAL TRAINING

During 1979 OSM's technical training staff made a vivid impact on the technical information and educational aspects of OSM's mission. Extensive training materials—particularly audio-visuals—were developed during this period. The Office, too, had a major responsibility for the preparation of blaster training and certification regulations. Staging conferences, seminars, training courses for OSM's inspection force, and designing a training and resources clearinghouse were other major activities tackled by this division in 1979.

AUDIOVISUAL INSTRUCTION PROGRAM ON SURFACE MINING

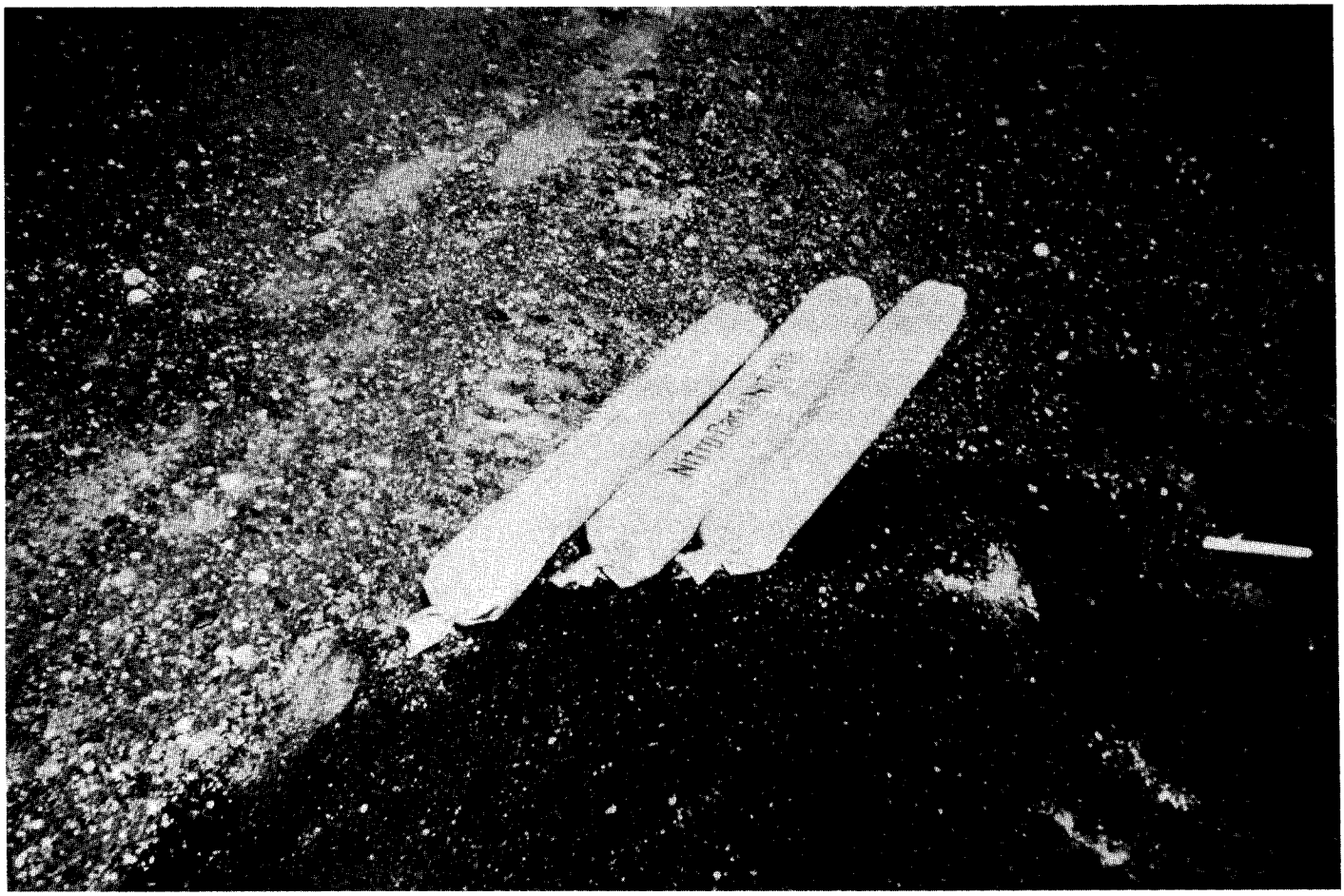
In January 1979 development began on six new audiovisual programs on surface mining. These included:

- The Surface Mining Control and Reclamation Act of 1977: An Overview
- Surface Effects of Underground Mining
- Abandoned Mine Lands
- Blasting
- Hydrologic Investigations
- Reclamation and Pollution Control in Arid and Semi-Arid Regions

The audience for these AV instruction programs, supported by written technical guides, will be State and Federal regulatory personnel, industry, educational institutions, legislators, and the public. Individual units will be distributed as they are developed. This project was funded by a grant to the Interstate Mining Compact Commission under an interagency agreement with the U.S. Environmental Protection Agency using FY 1978 funds.

BLASTER TRAINING AND CERTIFICATION

Regulations to establish a nationwide training, examination and certification program for blasters were proposed on June 29, 1979. Public hearings were held in Washington, D.C., and at five regional offices, with comment period closing Aug. 29, 1979. Through appropriate validation studies, OSM will establish testing and experience requirements for persons who conduct blasting. OSM awarded a contract for those studies on Sept. 28, 1979. The national studies will identify the essential job tasks of blast design, preparation and execution that must be performed to meet OSM blasting specifications and to identify the skills, knowledge, and abilities a person must demonstrate, through examination and experience, to assure competence in performing those tasks. These studies will be performed by a qualified psychologist using professionally acceptable methods to demonstrate that OSM selection procedures (examination and experience requirements) validly predict or measure performance for a particular job.



BLASTER TRAINING

OSM participated in June 1979 in three seminars at the request of Pikeville (Ky.) College's Technical Assistance Center, at Union College, Barbourville, Ky., and Lee's College, Jackson, Ky.

TRIBAL TRAINING

A three-day seminar on OSM regulatory programs was held at the Fort Berthold, N.D., Reservation in May 1979 at the request of the Fort Bethold tribal administrators and Argonne National Laboratory's Native American Energy/Environmental Training Program.

TRAINING RESOURCES CLEARINGHOUSE

Work began on development of a clearinghouse and resource center for surface mining and reclamation training materials. When established, it will serve as a source of information for States, industry, and academia on available materials. The clearinghouse is expected to help prevent duplication of cost and effort as organizations work to train people to meet the Act's environmental standards.

ABANDONED MINE LANDS

The technical training division developed an audiovisual instructional program: Abandoned Mine Lands Overview. This program addressed the historical significance of orphaned mined lands in the United States and introduced steps taken to correct these conditions under the Abandoned Mine Lands Program. Slide tape programs were sent to all OSM regional offices as well as to all coal-producing States.

SURFACE MINING OF NON-COAL MINERALS

The Act authorized the Chairman of the Council on Environmental Quality (CEQ) to conduct an in-depth analysis of current and developing technology for surface and open-pit mining and reclamation for minerals other than coal. The study was to determine whether these technologies could be used to achieve the requirements of the Act.

Like the Alaska Study, this study also was contracted through the National Academy of Engineering-National Academy of Science (NAS). The NAS organized a committee whose make-up included a broad range of disciplines and expertise. Committee members were:

James Boyd, Chairman, Consultant
Robert E. Bergstrom, Illinois Geological Survey
John R. Borchert, University of Minnesota
James R. Dunn, Dunn Geoscience Corporation
Perry R. Hagenstein, Consultant
Charles W. Hendry, Jr., Florida Bureau of Geology
Donald A. Jameson, Colorado State University
Ronald L. Little, Utah State University
Kenneth L. Ludeke, Monsanto Agricultural Products Company
Harold E. Malde, U.S. Geological Survey
Fred S. Matter, University of Arizona
Michael McCloskey, Sierra Club
Stanley D. Michaelson, Consultant
Alfred Petrick, Jr., Colorado School of Mines
Joe B. Rosenbaum, Consultant
Lee W. Saperstein, Pennsylvania State University
Arnold J. Silverman, University of Montana
Kenneth N. Weaver, Maryland Geological Survey

Nine different panels were formed to study the nature of different ore deposits and the mining techniques used to extract them under different environmental conditions: clay and bauxite; coastal plain deposits; construction minerals; discontinuous sedimentary ore bodies in bedded rock; large open pit mines in buried environments; natural building stone; large open-pit mining in low water table areas; oil shale and tar sands; and surface effects of underground mining, solution mining, and exploration. Each panel provided case studies and working papers that were used to prepare the study "Surface Mining of Non-Coal Minerals. A Study of Mineral Mining from the Perspective of the Surface Mining Control and Reclamation Act of 1977."

Committee findings were:

"That the degree to which the requirements of the Act can be met by existing or developing technology ranges from readily available to impractical depending on specific requirements and on the location and nature of the mineral deposit and method of mining and processing;

"That in those instances where the requirements of the Act cannot be met, the committee identified requirements most comparable to those of the Act that could be met, described the differences between the requirements and those of the Act, and estimated costs where estimates are feasible;

"That there are alternative regulatory mechanisms, and institutional approaches not regulatory in character, that could ensure the achievements of the most beneficial postmining land use for areas affected by surface and open-pit mining."

CEQ must review the NAS report and develop recommendations for specific legislative action to the President and the Congress.

THE ALASKA STUDY

Mining for coal in the 49th State requires far different technology than in the coal-producing States within the continental United States. Recognizing this, Congress provided in the Act for a study to evaluate surface mining conditions in Alaska to determine if any of its provisions should be modified to permit development of environmental performance standards responsive to unique conditions in that State. The study was to be performed by the National Academy of Sciences (NAS), and was due to be completed by May 31, 1980.

Since August 1978 the NAS committee, staffed by experts representing a cross section of technical and environmental communities, was charged with the responsibility of reviewing circumstances relating to topographic, climatic, and geologic conditions found in the State of Alaska, then recommending any legislative changes necessary to ensure that realistic provisions pertinent to Alaska were to be developed.

One approach taken by the committee in 1979 was to expose members to living and working conditions in Alaska. To accomplish this, two meetings were scheduled there. The first meeting—in Fairbanks in February—let the committee hear comments and opinions from both public and private sectors. The committee also visited the Corps of Engineers CREEL tunnel which depicted the physical constraints exerted upon engineering practices in permafrost. In July, they returned to Alaska. The entire committee reviewed and observed Placer-Amex, Inc.'s coal exploration activities in the Beluga coalfield near Anchorage. Some members also ventured north to the North Slope coalfields to observe the impact of man's activities on the permafrost and tundra environment.

This experience enhanced their understanding of the complex physical constraints of developing and operating a mining venture in Alaska and the impact a mining operation would exert on the fragile, but demanding, environment of that State.