



# ANNUAL REPORT 1980

of the Secretary of the Interior, under the Surface Mining Control and Reclamation Act of 1977

Public Law 95-87

OFFICE OF SURFACE MINING



# United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

To the President of the United States:

To the Congress of the United States:

Forwarded herewith is the 1980 Annual Report as required by the Surface Mining Control and Reclamation Act of 1977, P.L. 95-87.

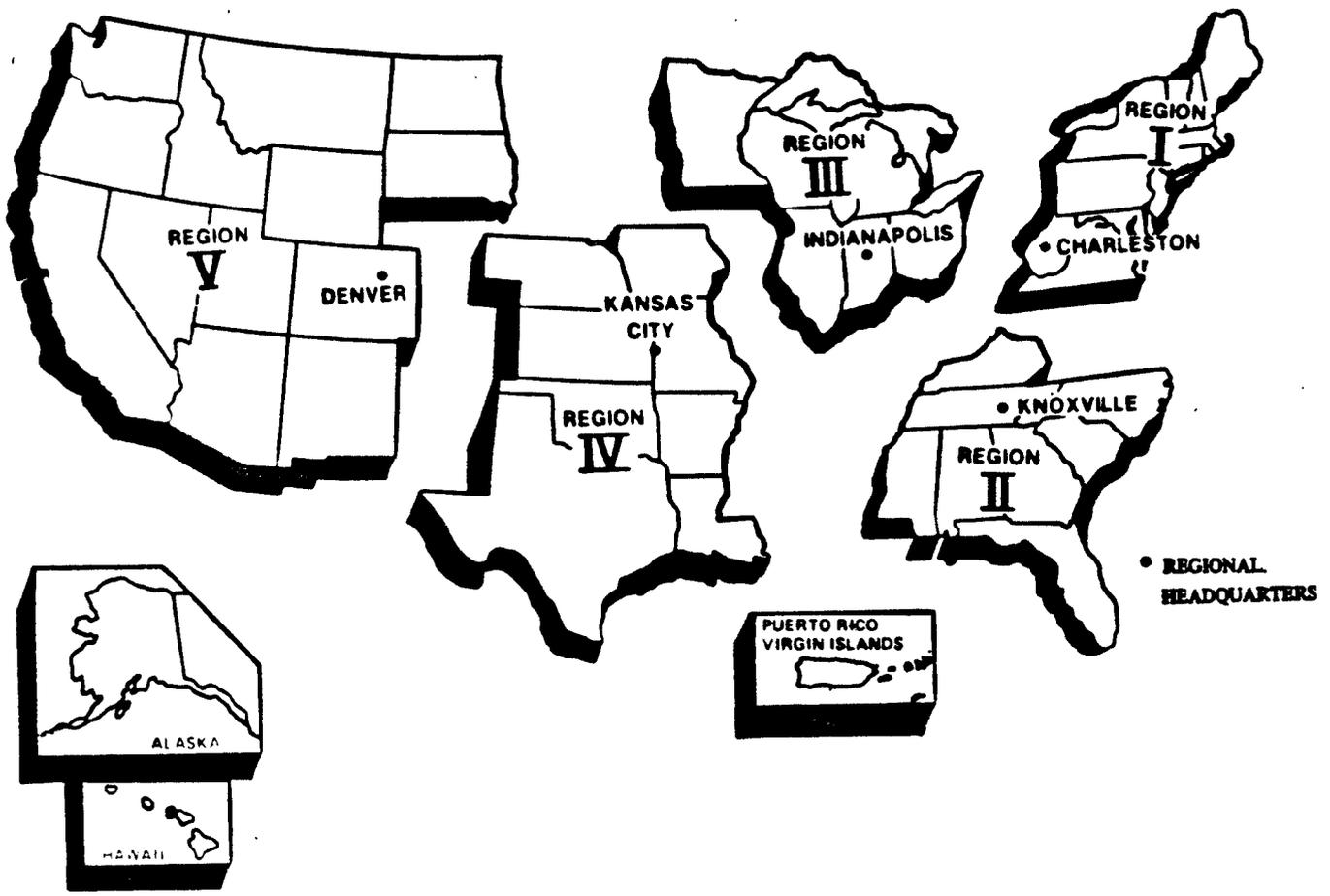
The report covers the activities and events of the Office of Surface Mining and highlights the transition of regulatory authority to the various coal-producing States.

The policies and actions were developed and taken by the previous administration.

JAMES G. WATT  
SECRETARY

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OSM REGIONS

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EXECUTIVE SUMMARY

One of the most important activities of the Office of Surface Mining Reclamation and Enforcement (OSM) during 1980 was the review of proposed permanent programs submitted by the States to regulate surface coal mining and reclamation operations within their boundaries. The objective of the regulatory programs is to minimize the adverse environmental effects of coal mining and to protect the public health and safety, while at the same time allowing for expansion of the coal mining industry to meet the Nation's growing energy needs.

Although the Surface Mining Control and Reclamation Act of 1977 (the Act) requires that OSM be responsible for establishing a regulatory program initially, the belief of the Congress that the States should regulate coal mining on a permanent basis is implicit in the Act.

Technical assistance and monetary grants were provided by OSM to assist the States in developing and implementing their programs, and public and industry participation was encouraged and received throughout the process.

The transfer to the States of regulatory authority for surface coal mining and reclamation operations started in 1980, on February 16, when Texas became the first State to have its program approved by the Secretary of the Interior. The Secretary's conditional approval gave Texas primary responsibility for administering its program. This achievement was a milestone in carrying out the intent of Congress.

As 1980 drew to a close, of the 24 States that submitted programs, 3 had their programs approved by the Secretary, 8 had their programs conditionally approved, 10 had their programs partially approved/partially disapproved, and 3 had their programs disapproved.

INITIAL REGULATORY PROGRAM

Although many States regulated surface coal mining activities before passage of the Act on August 3, 1977, no State program met the full range of requirements in the new Federal law. Because of the magnitude of changes required in most States, the Act established a two-step approach for issuing regulations: An initial regulatory program that required compliance with a number of critical standards, and a permanent regulatory program containing the full extent of the Act's requirements.

Since May 3, 1978, all surface coal mining operations have been required to have State mining permits, and to comply with the initial-program regulations. The initial-program regulations, which were issued

December 13, 1977, set standards covering topsoil, blasting, spoil and waste disposal, backfilling and grading, revegetation, postmining land-use planning, signs, dams, and the hydrologic consequences of mining, as well as special standards for steep-slope mining, mining on prime farmland, and mountaintop removal operations.

Because States needed to upgrade their programs in order to be able to enforce the initial regulatory program performance standards, OSM reimbursed 18 States for their extra expenses during the initial program. The grants allowed State regulatory agencies to revise mining permits to incorporate the initial performance standards in their regulations, respond to citizen complaints, purchase equipment, and increase the size and quality of their staffs.

### PERMANENT REGULATORY PROGRAM

On March 13, 1979, OSM issued the permanent-program regulations required by the Act. In order for a State to assume jurisdiction over the regulation of its surface mining and reclamation operations, the Act requires that it submit to the Secretary a permanent regulatory program that is consistent with the Act and with the program established by OSM. The deadline for submission of State programs was March 30, 1980.

### STATE PROGRAMS

Each State program is reviewed by the public, industry, OSM, the Department, and other Federal agencies. Notices providing a description of the program, stating where the program is available for public review, and inviting public comment are published in local newspapers and in the Federal Register. Public hearings are held.

Each State is allowed to make revisions in its program until the 104th day following submission of its program. After a second public-comment period and an additional public hearing, all comments are considered by OSM.

The Secretary then either approves, conditionally approves, partially approves/partially disapproves, or disapproves the State's program. An approved program grants a State immediate primacy--the State becomes the regulatory authority over coal mining within its borders. A conditionally approved program also grants immediate primacy to a State, but the State agrees to correct minor deficiencies by a certain date. A partially approved/partially disapproved program does not grant primacy, but the State is given a second opportunity to attain it. A disapproved program can also be revised and resubmitted. The Act provides 60 days for States to submit modifications. If the final decision is disapproval, OSM becomes the primary regulator for coal mining in the State through implementation of a Federal program.

However, under Section 503(d) of the Act, a State can be enjoined by a State court from resubmitting its program for approval or from enforcing its approved program, and a permanent Federal program cannot be imposed on

the State for the duration of the injunction or for 1 year, whichever is less, provided that the initial-program requirements established under Section 502 are enforced.

Of the 24 State programs submitted, 11 were approved or conditionally approved, 10 were partially approved/partially disapproved, and 3 were disapproved. Eight States were enjoined from making a resubmission, and one State was enjoined from proceeding with implementation of its conditionally approved program. (See table 1.)

OSM assisted the States during the development of their initial and permanent regulatory programs, both with guidance and with grants-in-aid that reimbursed State agencies for the cost of developing or revising laws, regulations, and procedures. In FY 1980, 18 States received a total of \$16,812,737 for initial-program support and 8 States received \$921,314 for development of their permanent programs. Additional grants of \$988,006 were made to two States for administration and enforcement of their permanent programs. (See table 2.)

#### FEDERAL PROGRAM

OSM is required to regulate surface coal mining and reclamation activities on non-Federal land in a State under three conditions:

- o The State's proposal for the permanent regulatory program receives final disapproval from the Secretary of the Interior,
- o The State does not submit its own permanent regulatory program, or
- o OSM subsequently withdraws its approval of the State's program.

OSM encourages and supports the primacy of States in the regulation of surface coal mining and reclamation operations within their borders. Only two States with active mining--Georgia and Washington--did not submit regulatory programs by March 3, 1980. Federal programs are being developed for them.

Federal programs--to regulate coal exploration--are also being considered for Massachusetts, Michigan, Oregon, and Rhode Island, which have or may have in the foreseeable future coal-exploration operations.

#### FEDERAL LANDS PROGRAM

The Federal government owns significant coal resources in Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming, and throughout the West. Of the 240 billion tons of identified coal reserves in that region, 80 percent is either federally owned or its development is dependent upon issuance of Federal coal leases. Approximately 72 million tons of coal was mined from Federal lands in FY 1980, about 13 million tons more than the FY 1979 production.

OSM's major responsibility in the Federal coal-management program, in addition to reclamation and enforcement activities, is to provide assistance to the U.S. Bureau of Land Management (BLM) in the Federal coal leasing program. The agency's involvement in the Department's coal leasing program is expressed in a memorandum of understanding that defines the cooperative effort between OSM, the U.S. Geological Survey, and BLM.

It also establishes procedures by which the three agencies carry out functions and responsibilities for Federal preleasing activities and the regulation of operations under Federal coal leases and exploration licenses where Federal coal reserves are involved.

Preleasing activities in the West have vital significance since the bulk of Federal reserves is in that region. The Department's cooperative effort attempts to reduce the amount of work and the range of decisions in environmental impact statements by providing information in advance so that site-specific analysis of proposed leasing tracts, consultation among agencies, and review of prelease stipulations can shorten the leasing process.

Region V's Federal Lands Branch participated in the program with four regional coal teams. Each team is made up of BLM State Directors and representatives of Governors. OSM, U.S. Fish and Wildlife Service, and National Park Service representatives are ex-officio members.

OSM's participation involved the following areas:

- o Green River - Hams Fork Region (Colorado and southwest Wyoming)
- o Uinta - Southwestern Utah Region (Utah and west-central Colorado)
- o Powder River Region (eastern Wyoming and south-central Montana)
- o Fort Union Region (eastern Montana and western North Dakota)

#### COOPERATIVE AGREEMENTS

The administration of most of the Act's requirements for the Federal lands program may be transferred from OSM to States through cooperative agreements. Through such agreements, State regulatory authorities exercise enforcement powers on Federal lands. Certain authority, not delegable to the States, is retained by the Secretary.

During FY 1980, Montana, Utah, Wyoming, and North Dakota continued to administer the initial regulatory program on Federal lands under cooperative agreements approved in 1979. An agreement with New Mexico was approved in 1980. Cooperative agreements with States under the initial regulatory program remain in effect until the State's permanent regulatory program is approved or disapproved by the Secretary.

In July 1980, OSM published in the Federal Register a notice of its intent to propose rulemaking to adopt a permanent-program cooperative agreement with Wyoming. A similar notice was published in September 1980 for Montana. Processing has begun on requests for cooperative agreements with Utah, New Mexico, Texas, and Oklahoma.

OSM expects that most other States with coal development on Federal lands will request cooperative agreements under the permanent program.

#### MINE-PLAN REVIEW

During 1980, OSM participated in the review of mining and reclamation plans for coal mining on Federal lands to determine compliance with requirements of the Mineral Leasing Act of 1920, as amended, the environmental performance standards of the Surface Mining Control and Reclamation Act of 1977 (the Act), and the National Environmental Policy

Act (NEPA). OSM, in coordination with other State and Federal agencies, must address all of the effects of mining before a plan may be approved.

Decision packages on mine plans are prepared for the Secretary of the Interior's approval or disapproval. Each package consists of documentation of compliance with the Act, an environmental analysis in accordance with NEPA, other documentation required by the Mineral Leasing Act, the concurrence of the Federal land management agency, and any stipulations necessary as conditions for approval.

Over 60 percent of the coal in the West is federally owned, and 25 percent of the known coal land is federally administered. Frequently, Federal and non-Federal coal land are mixed in checkerboard ownership patterns. The States of Wyoming, Montana, Utah, Colorado, New Mexico, and North Dakota together account for 98.5 percent of all production of Federal lands, with Wyoming alone producing 55 percent of the total.

The size of proposed mines in the West and the need for increased coal production place serious demands on OSM. A typical western mine encompasses about 4,000 acres, and the projected life of the mine may be 35 years. The impact of each mining endeavor may be considerable. Almost all coal mining in the region occurs in dry climates where the annual average precipitation is less than 26 inches per year. In the Four Corners area for instance, where Utah, Arizona, New Mexico, and Colorado meet, precipitation during the growing season averages 4 inches. Revegetation can be difficult under these circumstances. However, OSM is confident that despite climatic problems and the peculiar wilderness situation in the West, coal can be mined and the land can be reclaimed.

Mine-plan actions processed during FY 1980 include 15 major actions (new mines and major modifications to existing mines) and 211 minor actions. About 70 actions are currently pending.

#### PETITIONS TO DESIGNATE LANDS AS UNSUITABLE FOR MINING

Any person who may be adversely affected by proposed surface coal mining operations on Federal lands may, under the Act, submit a petition to designate those lands as unsuitable for mining. In 1980, OSM received two petitions.

The first petition, received on November 28, 1979, involved approximately 300,000 acres of Federal land near Bryce Canyon National Park and the Dixie National Forest near Alton, in southern Utah. The petitioners alleged that (1) the lands in question could not be reclaimed in accordance with the requirements of the Act; (2) surface coal mining operations could result in significant damage to important historical, cultural, scientific, and esthetic values and national systems of fragile lands; and (3) such operations could result in a substantial loss of water supply or food or fiber products, including damage to aquifer-recharge areas of renewable-resource lands.

Since this was OSM's first full-scale petition investigation, new ground was broken in determining whether the allegations were valid. Many other agencies took an active part in the process: the U.S. Bureau of Land Management, Geological Survey, National Park Service, Fish and

Wildlife Service, and Environmental Protection Agency and the State of Utah.

Additionally, because a decision on the petition was considered a major Federal action with a potentially significant impact on the environment, the Department determined that an environmental impact statement would be required as part of the decision process.

On December 16, 1980, Secretary Andrus declared the easternmost portion of the Alton coal field and other areas adjacent to Bryce Canyon National Park as unsuitable for surface coal mining. It is estimated that less than 10 percent of the field's recoverable coal deposits under Federal lease will be barred from surface mining.

The Secretary's decision was based on a need to protect nationally significant values of the national park. Surface mining, blasting, heavy truck traffic, and air-quality degradation in the area closest to the park were determined to be unacceptable. The decision was an effort to preserve scenic sandstone formations, visual clarity, and the quiet environment.

The decision does not ban all underground mining but relates only to visual intrusions from mining a specific area that would be visible from the park. State and privately-owned coal is unaffected. Mining is banned in a maximum of 9,049 acres of some 26,693 under Federal coal lease.

OSM received the second petition to designate lands as unsuitable for mining, from the West Virginia Highlands Conservancy, on April 24, 1980. The petition involved certain Federal lands within the Monongahela National Forest, in the watershed of Shavers Fork River from Cheat Bridge in Randolph County to Parsons in Tucker County, W. Va.

The petitioner alleged that (1) coal mining activities would endanger the water quality of the area; (2) coal mining operations could result in significant damage to important historic, cultural, scientific, and esthetic values and natural systems of fragile lands; and (3) such operations could adversely affect the various recreational uses of the national forest.

OSM held a public meeting on August 12, 1980, at Elkins, W. Va., to elicit information and input from the public on the range of issues raised by the petitioner. During September 1980, OSM found that valid existing rights considerations applied to a portion of the petitioned area. In October, Region I commenced a series of biweekly public meetings in Charleston to discuss the progress of the petition. A final decision on the petition was still pending at the end of the year.

#### INDIAN LANDS PROGRAM

Surface coal mining and reclamation operations on Indian lands were regulated during 1980 under a combination of authorities of the Secretary. Section 710(d) of the Act became effective on February 3, 1980, making the full range of the Act's permanent-program requirements applicable to Indian lands as of that date.

An unusual challenge to coal mining operations is presented by the Indian lands in New Mexico, Arizona, and Montana because of the potential archeological and cultural significance of the areas. Of the 6 mining

operations on Indian lands, 4 are among the top 15 active mines in the United States, producing over 20 million tons of coal a year.

Draft legislation which would allow tribes to become the regulatory authority on Indian lands was submitted to the coal-owning tribes for their review and comment. The draft legislation was prepared in response to the requirements of Section 710(a) and was based on the study report of the Council of Energy Resources Tribes (CERT) and on a jurisdiction study by the Department's Office of the Solicitor. Meetings were held with the seven major coal-owning tribes to explain and discuss the proposals. The legislation is intended to allow Indian tribes to elect to assume full regulatory authority over surface coal mining on Indian lands. The draft is being revised to reflect tribal concerns, and it will be ready for submission to the Congress in 1981.

In order to document mutual procedural arrangements for carrying out agency functions and responsibilities for coal operations on Indian lands, a memorandum of understanding between OSM, the Geological Survey, and the Bureau of Indian Affairs was signed on May 8, 1980. The document recognizes the role of Indian tribes as coal owners and as governmental entities having basic authority for the administration of Indian resource programs.

#### SMALL-MINE OPERATOR ASSISTANCE (SOAP)

Provisions built into the Act by Congress to assist small-mine operators in meeting certain permit requirements under the permanent regulatory program are carried out through the Small Operator Assistance Program (SOAP). Qualified operators are those who produce more than 250 tons but less than 100,000 tons of coal per year. The Act specifies that up to 10 percent of the fees collected under Section 402 for the Abandoned Mine Reclamation Fund is to be used for technical assistance to help those operators meet requirements for determination of the probable hydrologic consequences of the proposed mining operation, and a statement of the results of test borings or coal samplings. The "determination" is an analysis of the effect of the proposed operation on the quantity and quality of surface and ground water. The "statement" is an analysis of the overburden, coal, and affected aquifers and clay zones below the coal in order to provide information on their chemical and physical makeup, especially acid- and toxic-producing materials.

Although the SOAP program technically was to take effect during the permanent regulatory program, it was initiated early so that data collection and analysis could be conducted for operators when mine-permit applications were submitted. Launching this program was a major effort of OSM in 1979 and continued to be in 1980 because long lead times are required to collect the essential data. Of 328 operators who applied for assistance, 256 were approved.

The data collection and analysis are provided by qualified laboratories and consulting firms. Nationwide, OSM has designated 379 laboratories as qualified, an increase of 170 since the first list of

laboratories was published in the Federal Register in February 1980. Requests for proposals for contract awards for SOAP services were evaluated throughout the year, and 82 contracts were issued to laboratories.

Regulations for SOAP place responsibility for the program with the States that have approved permanent programs. Indiana, Missouri, New Mexico, Pennsylvania, Tennessee, Utah, and Wyoming declared their intent to have OSM operate the program on their behalf until they are prepared to assume the SOAP responsibilities or until they receive approval of their regulatory program, whichever comes first. Georgia and Washington did not submit proposed permanent programs, and OSM is operating a Federal SOAP program in those States. In 1980, the 13 States operating their own SOAP program received a total of \$15.7 million in new SOAP interim grants or extensions on existing grants. Operational grants for payments to qualified laboratories totaled \$15.4 million, and administrative grants for management of the State SOAP programs totaled \$270,856. (See table 3.)

#### INSPECTION AND ENFORCEMENT

In FY 1980, OSM conducted 38,129 inspections, covering about 68 percent of the 15,512 inspectable mine units under its jurisdiction. These inspections resulted in 7,514 notices of violation and 1,559 cessation orders. OSM received 1,130 citizen complaints, of which 98 percent resulted in inspections. (See table 4.)

The most frequent violations involved--

- o Sediment control,
- o Effluents,
- o Blasting,
- o Topsoil handling,
- o Identification signs and markers, and
- o Haul roads.

Inspectors continued to receive training in new techniques and the changing pattern of regulations. Among training programs completed by OSM inspectors were--

- o Remote sensing--information for supervisory inspectors on small- and large-scale imagery, and understanding of satellite data;
- o Oversight training--inspection and enforcement under the permanent regulatory program; and
- o Hazard and first-aid training--the need for inspector safety.

During FY 1980, OSM issued three key manuals that provide additional perspective on important facets of OSM's inspection and enforcement activities:

- o "Rights of Operators and Permittees," which helps operators understand their rights in seeking review of OSM enforcement actions;
- o "Assessment Manual," which details the assessment process and the basis on which assessments for violations are computed; and
- o "Inspection Manual," which assists inspectors in carrying out their duties.

During 1980, a new computerized inspection activity summary (IAS) system was put into operation, replacing a manual tracking system. The IAS information is available to the public and provides various types of summaries such as number of citizen complaints, inspections by States, kinds of violations, and the like.

In FY1980, OSM instituted a special program to take prompt steps to collect overdue penalties. By the end of 1980, OSM had assessed nearly \$3.2 million in penalties for the period 1978-80. Of this amount, \$1,473,204 has been paid or collected, and 607 cases involving \$1,654,840 in penalties have been referred to the Department of Justice for collection proceedings.

#### COOPERATIVE EDUCATION-WORK PROGRAM

As part of the Federal Equal Opportunity Recruiting Program (FEORP), three cooperative-education students were employed for training in the Inspection and Enforcement Division of Region III. Cooperative-education agreements were signed between OSM and Wilberforce University, the University of Wisconsin, Indiana State University, the University of Illinois, and the University of Evansville.

Region II had 12 students enrolled in the cooperative-education program during the year. The region has agreements with eight colleges and universities, four of which are historically minority schools.

This program makes it possible for students to get practical experience in conjunction with their education, and to be exposed to a career field before becoming committed to a permanent job.

#### "WILDCATTING"

Wildcatting--or mining without a permit--has proved to be a persistent problem in enforcing the Act, especially in certain parts of Appalachia. Hard feelings and overt hostility are readily apparent whenever an inspector comes upon a wildcatter.

For example, gunfire was directed at two OSM inspectors as they approached a wildcat operation in Kentucky. The Justice Department is still investigating the incident. Another inspector was ambushed and assaulted on a public road in Tennessee, by an operator who had been cited in the past for wildcatting and other violations. A Federal judge fined the operator \$5,000 and placed him on probation for two years. After another incident, a wildcatter was convicted for interfering with OSM inspectors by blocking their vehicles so they could not leave the minesite.

In addition to the hostility, wildcatting is a problem because failure to get a permit usually means little consideration is given to the environmental effects of mining. Therefore, the damage to the environment usually is far greater than when the mining is done legally. Legitimate coal operators also are concerned about the wildcatting problem--both because of the bad name wildcatters give the industry and because wildcatters, by ignoring reclamation requirements, can sell their coal at a lower price.

## ABANDONED MINE LANDS

Title IV of the Act--the Abandoned Mine Land (AML) program--provides for the restoration of the more than 1.1 million acres of land in the United States disturbed in the past by inadequately controlled mining practices. Production fees of 35 cents per ton of surface-mined coal, 15 cents per ton of underground-mined coal, and 10 cents per ton of lignite are paid on all active coal mining operations and are included in the Abandoned Mine Reclamation Fund. (See table 5.)

The Fund is distributed as follows:

- o 20 percent to OSM for emergency and high-priority reclamation projects and administrative costs.
- o Up to 10 percent or up to \$10 million to assist small-mine operators (those mining less than 100,000 tons annually) through the SOAP program, which helps pay laboratory and consulting fees for certain data needed to obtain a mining permit.
- o 50 percent to a State or an Indian tribe with approved regulatory and reclamation programs.
- o Up to 20 percent to the Rural Abandoned Mine Program (RAMP) directed by the Department of Agriculture's Soil Conservation Service to reclaim rural lands. Rural land owners apply for RAMP funds through the local Soil Conservation District.

Lands mined and abandoned or left inadequately restored before August 3, 1977, and for which there is no continuing reclamation responsibility under State and Federal law, are eligible for fund assistance.

In 1980, OSM handled only emergency and high-priority projects. Emergency projects are those involving abandoned coal mine lands that present an immediate danger to the public health, safety, or general welfare (for example, a house sinking because of subsidence) and that require immediate action (24 hours).

High-priority projects are those that present an extreme hazard to the public health, safety, or general welfare but do not require immediate action. High-priority projects include such situations as unsafe water impoundments or waste banks, mine or waste-bank fires affecting populated areas, and mine drainage that degrades water quality and quantity.

For all emergency cases, and some high-priority projects as well, OSM awards a contract directly to a private company and oversees the work itself. In other situations, OSM enters into a cooperative agreement with the appropriate State agency and then turns the funds over to the State, which either does the reclamation work itself or in turn awards a contract to a private firm and oversees the project.

### STATE RECLAMATION PROGRAMS

Aside from their work directly on reclamation projects, AML personnel also worked with their State counterparts during the year, helping them develop State reclamation plans so they could be approved as soon as a

State gained primacy over the regulatory program. Once a State has attained primacy and OSM has approved the State reclamation plan and annual work plan, the State can begin receiving its share of the reclamation fees collected from coal production in that State.

Through FY 1980, 19 States and Indian tribe received \$6 million for such purposes through cooperative agreements with OSM. During FY 1980, Texas submitted and received approval of its reclamation program, and the State is now ready to implement reclamation projects. In addition, Montana, Illinois, and Virginia submitted programs for review and approval. It is expected that 17 programs will be submitted during FY 1981.

### FEDERAL PROJECTS

Until a State or Indian tribe has approval of its reclamation plan and work plan, all reclamation is carried out as Department of the Interior projects administered by OSM or through the Rural Abandoned Mine Program (RAMP) administered by the Department of Agriculture. In 1980, all emergency and high-priority projects were funded by the Federal share of the fund. A total of 358 Interior projects was completed or underway at the close of FY 1980, at a cost of \$66,758,300. (See table 6.) All funds thus far appropriated for Interior projects were obligated. Reclamation is proceeding through cooperative agreements with States, competitive contracts with private firms, and reimbursable agreements with other Federal agencies.

Reclamation-project review and selection are continuing processes. Potential projects may be nominated by interested individuals or public-service groups, or identified by State or Federal agencies. When a project is proposed, OSM consults with appropriate State reclamation agencies and the Department of Agriculture to determine the optimum form of funding, to ascertain the degree of project support, and to avoid duplication of effort.

### RURAL ABANDONED MINE PROGRAM (RAMP)

The Act includes special provisions for the support of programs designed to reclaim rural soil and water resources adversely affected by past coal mining. Up to one-fifth of the money deposited in the AML fund can be transferred to the Department of Agriculture for use in its RAMP program, which is a cost-share program.

During FY 1980, a total of 2,865 program applications for the purpose of reclaiming 91,000 acres of disturbed land and water in 29 States was submitted to RAMP.

Of those applications, 596 were classified as extreme danger (priority I); 964 as adversely affecting public health and safety (priority II); and 1,314 as adversely affecting the environment (priority III). Eighteen applications were referred to OSM and/or State reclamation agencies for funding under the extreme-danger provisions of the Act.

Approximately 137 contracts for the reclamation of 2,899 acres had been undertaken through September 1980, obligating \$14.8 million. Additionally, 74 long-term (5-10 year) RAMP contracts in 19 States were signed during FY 1980, obligating \$8 million. Reclamation construction was completed or underway on 57 of the contracts, and reclamation of 843 acres was completed. The reclamation resulted in the elimination of health and safety hazards and the improvement of water quality and fish and wildlife habitat of 462 acres.

#### FINAL ABANDONED MINE LANDS ENVIRONMENTAL STATEMENT

Pursuant to Title IV of the Act, and to the National Environmental Policy Act (NEPA) of 1969, OSM published a programmatic final abandoned mine lands environmental statement (FES) in March 1980. The FES addresses alternatives for allocation of the Federal share of the fund, and the guidelines for conducting the AML program. Funding alternatives included allocation based on the national fee-collection percentages, historic coal-production percentages, existing AML problems and their magnitude, and a formula using a composite of the alternatives. Additionally, the option of no action was considered.

The preferred alternative was an allocation based on a goal-oriented composite approach that would concentrate on areas with the most severe land-reclamation problems that affect the largest number of people.

#### ABANDONED MINE LANDS INVENTORY

The Act requires OSM to identify and reclaim abandoned mine lands or waters affected by past coal mining. Accordingly, a national inventory of abandoned mine land problems is under development to assist OSM and the States and Indian tribes in project identification and selection, and to develop plans, schedules, and budgets for the reclamation of such lands.

Phase I of the inventory was initiated and completed during 1979. The objective was to document the extent of data available for abandoned mine lands. It was accomplished under a March 1979 memorandum of understanding between OSM and the Department of Energy's Oak Ridge National Laboratory (ORNL). Bibliographies of AML information were prepared by 28 States and one Indian tribe.

Phase II of the inventory consists of State and Indian tribe field identification and verification of AML problems. When complete, this phase will permit the storage, retrieval, and mapping of AML problems. Data-collection activities will proceed through July 1982.

#### AN AML EMERGENCY PROJECT

As previously indicated, OSM completed numerous emergency projects during 1980. At one such project, subsidence threatened to destroy the State police headquarters in Maryville, Indiana, the busiest police facility in Indiana and the site of a 350-foot radio communications tower.

The subsidence started as a deep crack in the parking lot, and soon cracks developed in the floor and walls of the headquarters building. The Illinois Abandoned Mine Lands Council monitored the problem for more than a month, and when one of the walls of the building started to move, OSM's Region III office in Indianapolis was called. Of particular concern was the radio tower. The base of the tower, a concrete pillar buried 30 feet in the ground, was shifting, and tension on the tower guy wires was increasing.

Region III declared the situation an emergency. Within 24 hours, OSM had approved funds for temporary abatement of the problem and had a contractor on the job. The tower was stress tested, the building was braced, measures were taken to keep the roof from cracking, and a gas-line break was repaired. The emergency procedures enabled the State to proceed with more extensive measures to permanently stabilize the installation.

State officials lauded the rapid response, which was critical to the 800,000 persons served by the headquarters. Each month the facility transmits more than 100,000 radio messages, receives 250,000 radio messages, and handles 71,000 computer terminal messages; and it coordinates communications for local police, sheriff's departments, hospitals, and Federal agencies.

#### TECHNICAL SERVICES

A major task for Technical Services during 1980 was the review and critique of all 24 State permanent regulatory programs. After initially reviewing each of the plans, the staff worked on at least four--and sometimes as many as eight--subsequent reviews. The staff also reviewed programs from four States that plan for coal exploration only, assisted in the initial development of Federal regulatory programs for Georgia and Washington, and reviewed several State abandoned mine lands plans.

Another major task of Technical Services was the review of mine plans for surface and underground coal mining on Federal lands. Fifty mine plans were on hand for review at the beginning of 1980. During the year, an additional 17 plans were received and 17 were approved. In order to expedite the reviews, several members of the Washington staff were detailed to the Denver office and six contractors were engaged. In addition, the U.S. Geological Survey continued to assist OSM.

Assistance was also provided for review of two petitions to determine if land in the Alton, Utah, and Shavers Fork, W. Va., areas was unsuitable for mining.

Finally, Technical Services wrote more than 70 minor revisions of the regulations and 3 major revisions, including proposed revisions of blaster training and bonding procedures. About 50 other regulations were being considered for revision, including the technical matters remanded by Judge Thomas Flannery in the permanent regulatory program litigation.

## EXPERIMENTAL PRACTICES

Alternative mining and reclamation practices that are not required to comply with selected regulations are permitted by the Act, in order to encourage advances in mining technology and to allow alternative postmining land uses for industrial and other purposes. However, the experimental practices must be shown to meet all other standards established by the Act, and to maintain protection to the environment and the public. OSM works closely with States and operators in developing the practices.

Three experimental practices were approved during 1980. The first proposal involved transporting excess spoil down lanes by gravity, instead of having to haul it by truck. The experimental practice was granted by OSM, but it later was abandoned by the company because of economic considerations. This same company later proposed a side-dumping and rehandling technique to move excess spoil to its disposal site and this also was approved by OSM.

The second experimental practice involved a mine near Crown City, Ohio, in Lawrence and Gallia Counties. A construction technique called "zoned embankment fill" will be used to dispose of excess spoil. The technique involves constructing a compacted earth embankment with a chimney drain, behind which the uncompacted spoil is placed. Vegetation and topsoil are removed only from the compacted embankment area, not from the spoil-disposal area.

Four disposal sites offering a diversity of applications for this experimental practice have been proposed. Two sites vary in topography, the third site involves abandoned mine land, and at the fourth site the fill will be constructed without a chimney drain. The operator proposed an operating plan which involves measurement of stability, water levels, and sediment yield--inclinometers and piezometers will be installed in each fill, and downstream sedimentation ponds will be surveyed periodically.

Finally, an experimental practice was approved for the Southwestern Illinois Coal Co.'s Captain mine, Perry County, Ill., the largest bituminous coal mine in the country.

In March 1980, the soil scientist at the mine initiated an experimental reclamation program that it is hoped will make the soil more productive than before mining. Using a 100-acre plot of mine area as a laboratory, and \$37 million worth of reclamation equipment, the company plans to "manufacture" soil that it expects will yield crops equal or superior to those produced on the land before mining.

Various mixtures and depths of soil materials will be used to construct a number of plots within the 100-acre area. The reclamation plan is built around a bucket-wheel excavator that removes the soil horizons of the overburden. The soil is transported by a series of conveyor belts to a mixing or reclamation point, and then distributed by a spreader without causing undue compaction. This method differs from the conventional reclamation practice in which the soil horizons are stored separately and replaced in original order.

The B horizon of the area usually contains too much clay. By mixing the horizons and using a light-treading soil spreader, Southwestern expects the resulting soil will be a better rooting medium than the original soil.

#### PRIME FARMLAND

Implementation of prime-farmland regulations has been a central issue nationally, with sharp focus on the midwestern States. Illinois, because it has extensive areas of prime farmland underlain by strippable coal, has been a center of controversy concerning the grandfathering of prime-farmland areas. Suspension of the regulations governing implementation of the grandfathering clause led to proposed rulemaking and public hearings in Washington, D.C., and Springfield, Ill., during May 1980 and subsequent extended public-comment periods.

Other important prime-farmland regulations were suspended or remanded by the courts during 1980. Significant among them were crop production as a measure of successful reclamation and moist bulk density as a standard for soil compaction in reconstructed soils. Region III personnel participated with the U.S. Department of Agriculture in trying to resolve these issues. Some of the court decisions will be appealed and resolution of the issues sought.

A problem being researched in a cooperative effort by OSM, Peabody Coal Co., and the Missouri Department of Natural Resources is revegetation of prime farmland. This study, started during a drought year, compares the yield of corn, grain sorghum, and wheat grown on undisturbed prime-farmland soil to the yield on prime-farmland soil that has been reclaimed with scrapers. It addresses the general question of how to restore the premining yield of prime-farmland soil, the answer to which is important because it would affect the release of performance bonds to the coal mine operator upon successful reclamation of prime farmland.

#### SEDIMENT REMOVAL BY FLOATING HYDRAULIC DREDGE

Sedimentation ponds prevent sediment from going off the minesite by slowing down the flow of runoff, which causes the sediment to settle out to the bottom of the pond. Draglines, power shovels, and front-end loaders generally are used for removing the slippery mud. One of the applied research projects of Region IV's Division of Technical Services and Research was a sediment-removal demonstration using a hydraulic dredge that floats in sedimentation ponds.

Tested at a northern Missouri coal mine, the floating dredge removed 1,154 cubic yards of sediment in 29 hours of operation by pumping the mixture of sediment and water through irrigation tubing to a remote discharge area. The technique has proved to be effective even in rough, hilly areas with poor access, and it is 12 times cheaper than using a front-end loader and 5 times cheaper than using a dragline. The demonstration was a cooperative effort by OSM and industry.

## ENVIRONMENTAL ANALYSIS

OSM must ensure, under the National Environmental Policy Act (NEPA), that the impact of its decisions and actions that might affect the environment are evaluated and integrated into its decision-making process. The Branch of Environmental Analysis (BEA) is responsible for OSM's compliance with NEPA, and is also the OSM contact with other Federal agencies, State and local government units, and the public in regard to NEPA activities. In addition, it coordinates the OSM review of other agencies' environmental documents.

The role of BEA within OSM is one of advisor and consultant to the staff, and in this capacity it has participated in various OSM activities, including review of reports, programs, and regulations to ensure compliance with NEPA; the preparation of memorandums of understanding (MOU's) with other agencies; environmental assessments (EA's); environmental impact statements (EIS's); petition documents; handbooks and procedures relating to NEPA; and the monitoring of contracts relating to mine-plan review.

During 1980, the branch coordinated the review of 133 environmental documents prepared by agencies other than OSM. It also participated in the development and review of environmental aspects of a variety of OSM reports, regulations, State programs, and other actions, including the draft EIS "Proposed Mining and Reclamation Plan, Rojo Caballos Mine, Campbell County, Wyoming" (OSM-EIS-3); the preliminary draft EA on coal mining in northwestern Georgia; the EA on anthracite coal mine regulations; the EA on the proposed rules for regulating surface coal mining and reclamation operations on Indian lands; the final EIS "Implementation of Program Policies for Federal, State, and Indian Abandoned Mine Land Reclamation Under Title IV of the Surface Mining Control and Reclamation Act of 1977" (OSM-EIS-2); the final southern Utah petition evaluation and environmental statement documents (OSM-PE-1 and OSM-EIS-4); and the EIS on the proposed Centralia Mine Fire Control Project in Columbia County, Pa. Two handbooks, on editing and publishing EIS's and on compliance with NEPA, have been prepared. The branch also assisted in preparing procedures for NEPA compliance in awarding grants to the States, and the development of EA's on a variety of other mining and reclamation plans on Federal lands.

## APPLIED RESEARCH

The year 1980 marked a significant turning point in the direction and implementation of OSM's applied research and interagency research-coordination program. The first competitive requests for research proposals were released, and 18 contracts were awarded to initiate investigations for resolving engineering and environmental regulatory issues. The regulatory-compliance issues addressed included burial of toxic spoil, final-cut-lake approval criteria, overburden analyses,

water-diversion construction, erosion-control measures, and optimization of inspection-personnel productivity.

A series of contracts was awarded to develop a comprehensive abandoned mined lands handbook for conducting technically sound evaluations of public safety and environmental hazards associated with past mining practices, including control of mined-land subsidence, control of underground mine and surface coal-waste bank fires, stabilization of mine spoil, treatment and control of acid mine drainage, sealing of underground openings and boreholes, and mined-land reclamation.

OSM formalized several memorandums of understanding (MOU's) with other Federal agencies relating to research activities during the past year. An MOU between OSM and the Bureau of Mines was signed in February 1980. Bureau of Mines and OSM technical personnel met in April 1980 to review each agency's proposed FY 1981 research programs. This coordination not only served to minimize research duplication, but also generated cooperative projects in which both agencies will provide technical and financial resources.

OSM also established a formal research working agreement with the Department of Energy (DOE). OSM sponsored extended environmental investigations in connection with DOE research programs to develop improved cross-ridge mountaintop removal technologies for efficient and environmentally safe coal extraction. OSM established an arrangement with DOE to participate in the review of promising coal mining concepts and demonstration plans to identify any potential conflicts with the Federal regulatory program. Any such conflict identified would be addressed through specific research and experimental practices approved by OSM.

Additional coordination was completed in the following areas: geologic and water-research data requirements with the U.S. Geological Survey; mined-land reclamation with the Tennessee Valley Authority and Soil Conservation Service; fugitive-dust and hazardous-waste research with the Environmental Protection Agency; fish and wildlife information and research with the U.S. Fish and Wildlife Service; and water-resource coordination with the Office of Water Research and Technology. Many of these research and resource coordination efforts involved two or more agencies to ensure appropriate input and to prevent duplication of research.

In FY 1980 the applied research program initiated or completed the following investigations:

✓ Alternatives to outcrop barriers.--A preliminary investigation was conducted to establish procedures for using artificial barriers in lieu of the natural, undisturbed barriers required in Section 515(b)(25) of the Act to protect against slides and erosion. Several overburden and soil materials were analyzed, and construction procedures were evaluated. The report concludes that properly constructed artificial barriers possess improved support characteristics in comparison to natural, undisturbed barriers.

Handbook for small-mine operators.--This handbook provides techniques and procedures for protecting water resources that will be affected by coal mining and reclamation operations. The information interprets the

rationale for the various approaches and facilitates compliance with the Federal permanent regulatory program. Although the document was developed to assist small-mine operators, the total industry will find the report useful.

Land-use impacts on hydrology and flooding.--This research effort will analyze the effects of land-use changes on the magnitude and frequency of the flood flows and sediment characteristics of the Tug Fork River in Kentucky, Virginia, and West Virginia. The effort will include collection of data on small, single land-use impacts. Gage sites for this study have been constructed, and statistical analysis of existing hydrologic data has begun. An interim report describing the project, including historical hydrologic data, has been completed.

Satellite monitoring technology.--Development of a final report and an operational strategy, technique, and procedure for monitoring surface coal mines using digital Landsat data were established. Accurate classifications of acreage disturbed, vegetative cover, and change-over time were fully analyzed using STANSORT II software on a new computer system. It was established by using two demonstration areas--the Navaho Mine in New Mexico and the Rogers No. 2 in Oklahoma--that the capability exists to complement inspections with data from other sources. Regulatory agencies will be able to make further use of these procedures and technologies to assist with the detection of problems and for monitoring the reclamation of mining and revegetation for bond-release criteria.

Aerial photo surveillance.--Photographic reconnaissance was completed by the Tennessee Valley Authority to complement and assist inspection and enforcement activities in the Tug Fork Basin of the Appalachian coal region. This complete photo coverage of both active surface and underground mines is being used to measure compliance with the initial regulations. Areas of concern and examination on the low-altitude photography include sediment control and environmental problems dealing with landslides, acid-water discharge, dams and downslope spoil placement. Photos at a scale of 1:12,000 and detailed enlargements at a scale of 1:1500 are being analyzed and interpreted on an as-needed basis.

Plant materials.--This long-term study involved the collection, evaluation, and selection of plant species that are needed for revegetating lands disturbed by coal mining. The screening of these accessions or ecotypes is expected to result in the selection of phenotypes that are best suited for use in the revegetation of lands disturbed by mining, for erosion control, and for surface-mined land reclamation. The technology will be used to produce guidelines on the establishment and propagation of the phenotype(s) that can be used to successfully revegetate surface-mined lands.

Environmental abstract series.--Two in-depth publications entitled "Bibliography on Mined-Land Reclamation" and "Mine Drainage Bibliography, 1929-1980" were released. This abstract series brings together, in a series of documents, the results of past and present research to define the state-of-the-art in coal mining and reclamation.

Surface-mine water effluents.--Coal-mine effluents draining from surface-mined lands or from surfaces disturbed by underground mining have

been a source of water contamination for many years. This investigation identifies the major water pollutants associated with coal mining and creates a base of scientifically valid data that can be used by regulatory agencies and industry in developing additional guidelines for curbing this source of water pollution.

Fish and wildlife information.--A series of reports was released which provides technical information and guidelines for fish and wildlife monitoring procedures. The reports consist of three volumes: Part 1 - "Fish and Wildlife Information Needs in the Federal Surface Mining Permanent Regulation;" Part 2 - "The Status of State Surface Mining Regulations;" and Part 3 - "A Handbook for Meeting Fish and Wildlife Information Needs to Surface Mine Coal." These documents will provide regulatory agencies, industry, and the general public with a quick, easy reference to regulatory requirements and monitoring procedures.

Surface mining of non-coal minerals.--The Council on Environmental Quality (CEQ) requested the Department of the Interior's assistance in preparing recommendations to the President and the Congress as required by Section 709 of the Act on the mining of non-coal minerals. Section 709 directs CEQ to contract with the National Academy of Sciences--National Academy of Engineering (NAS) to analyze current and developing non-coal mining technologies and to determine applicable regulation for that segment of the minerals industry. The NAS released its findings and conclusions in a report entitled "Surface Mining of Non-Coal Minerals - A Study of Mineral Mining from the Perspective of the Surface Mining and Reclamation Act of 1977."

OSM, through the Assistant Secretary--Energy and Minerals, reviewed the NAS report and participated in the formulation of the Department's recommendations to CEQ. The following recommendations set forth the Department's policy:

Special studies should be conducted of the institutional and policy setting mechanisms for selected non-coal mineral industries. These studies would: (1) identify and evaluate the impact of mining for a specific commodity or group of related commodities; (2) describe existing Federal, State and local control mechanisms and their effectiveness in specific environmental settings; (3) identify gaps in coverage of important impacts and impacts that are inadequately controlled; and (4) propose possible legislative or other corrective actions.

OSM also participated with CEQ on four public-meeting panels in San Francisco, Denver, Atlanta, and Washington, D.C., to solicit comments and recommendations from industry, environmental groups, and other concerned citizens regarding the need for the regulation of the minerals industry.

Surface coal mining in Alaska--In October 1980, the National Academy of Sciences--National Academy of Engineering (NAS) completed an in-depth evaluation of surface mining conditions in Alaska to determine if the provisions of the Act should be modified to permit development of environmental performance standards responsive to unique conditions in that State.

NAS's findings for Alaska related to the coal, physical and biological environments, mining and reclamation technologies, socioeconomic environments, and regulatory environment. Unique or specific characteristics germane to Alaska include permafrost, tundra, climatic conditions, wildlife diversity, earthquakes, unique Native cultures and economy, transportation, land-use and ownership patterns, and lack of a scientific data base.

A departmental task force was established to review the findings and conclusions presented in the report and to develop draft recommendations for the Secretary.

#### MINERAL INSTITUTES

The Act, under Title III, authorizes Federal funds for establishing State Mining and Mineral Resources and Research Institutes (MMRRI's) to enhance mining-engineering and mineral-science programs. The law envisages one institute at institutions of higher learning in every participating State to "conduct competent research, investigations, demonstrations, and experiments of either a basic or practical nature, or both, in relation to mining and mineral resources and to provide for the training of mineral engineers and scientists." Of the present 31 institutes, 9 were designated in FY 1980. (See table 7.)

The Act provides funding to develop the research capabilities of the institutes, to conduct mining and mineral-resources research, and to provide scholarships, graduate fellowships, and postdoctoral fellowships.

#### ALLOTMENT GRANTS

An allotment grant of \$110,000 was awarded to each of the 9 institutes designated in FY 1980 and to 2 of the 22 institutes that had been designated previously, and a grant of \$82,500 was awarded to each of the remaining 20 institutes.

#### RESEARCH GRANTS

The Act also provides funds for grants to institutes to "conduct competent research, investigations, demonstrations, and experiments of either a basic or practical nature, or both, in relation to mining and mineral resources." Research-grant awards were made in FY 1980 for 91 research projects proposed by the institutes. Of the 91 research grants, 55 grants were for new research projects initiated in FY 1980, and 36 grants were to continue research started in FY 1979. The 55 new research grants were selected from 466 research proposals that were submitted. Under the competitive process, a total of \$5.3 million of FY 1980 funds was awarded.

### ACADEMIC-TRAINING GRANTS

The research projects funded by OSM provide training for students as working members participating in all areas of the research under the direction of a principal investigator. Financial assistance is available to the students in the form of scholarships, graduate fellowships, and postdoctoral fellowships. Each new institute receives an initial grant of \$160,000 for a 3-year period for scholarships and fellowships, a total of \$1,440,000 for the 9 institutes designated in FY 1980. A scholarship committee at each institute selects the recipients of the awards.

### COOPERATION BETWEEN INSTITUTES

The institutes are encouraged to plan and conduct programs in cooperation with each other, other agencies, and individuals for the solution of mining and mineral-resource problems. To achieve this objective, some of the institutes have formed consortiums to solve common problems. The first consortium formed, known as the Sun Belt Consortium, includes the institutes in the southeastern region of the United States. The Sun Belt Consortium is concentrating on the research and investigations needed to solve problems in developing the lignite resources of the region. Each participating institute conducts research on, or investigates, some particular aspect of the many problems needing solution before large-scale development of the lignite resources is feasible. The other consortium was formed in the Rocky Mountain area to pursue problems common to the West, including problems associated with the mining and processing of uranium and oil shale.

Cooperation on an intrastate basis is exemplified by the action of the institute at Ohio State University, Columbus. For their research effort, they received proposals from the following institutions of higher education: University of Akron, Kent State University, Youngstown State University, University of Cincinnati, Ohio University, Battelle Memorial Institute, Case Western Reserve University, University of Toledo, and Bowling Green State University.

### ADVISORY COMMITTEE ON MINING AND MINERAL RESEARCH

An Advisory Committee is required under the Act to consult with, and make recommendations to, the Secretary of the Interior on all matters involving mining and mineral resources and research.

The nine-member committee is composed of the directors of the U.S. Bureau of Mines, the U.S. Geological Survey, and the National Science Foundation; the presidents of the National Academy of Science and the National Academy of Engineering; and representatives of the working coal miners, industry, environmental groups, and the academic community.

The committee met three times during FY 1980, and provided guidance and recommendations on the procedures to follow in requesting research proposals from the institutes. Additionally, the committee advised OSM on the selection of the reviewers for evaluating the research proposals.

## TRAINING

Audiovisual Materials on Surface Mining.--In 1980, work continued on a project to develop six audiovisual instructional programs on surface mining and the natural environment. These programs, supported by written technical guides, are funded by grant to the Interstate Mining Compact Commission through an interagency agreement with the Environmental Protection Agency using FY 1978 funds.

The following programs were developed and distributed to all OSM regional and district offices, all IMCC member States, and the States of Wyoming, Colorado, Montana and New Mexico during FY 1980:

- o The Surface Mining Control and Reclamation Act of 1977: An Overview;
- o Surface Effects of Underground Mining; and
- o Blasting.

Development of programs on hydrologic investigations, abandoned mine lands and reclamation, and pollution control in arid to semi-arid regions continued.

Inspector training.--A pilot inspector-training class in which 10 inspectors were trained in oversight requirements under the permanent program was held in July 1980. Thirty inspectors participated in an advanced inspector-training class on using remote sensing as a technique for inspection of both active and abandoned mined land in September 1980.

Task analysis of inspector occupation.--Reclamation specialists from OSM and 11 States responded to a task-analysis survey of the inspector function. Computerized occupational survey reports resulting from this survey have been analyzed to determine the number of reclamation specialists performing each task, and the average percentage of time spent on the tasks. These data will be used as a basis for management decisions regarding training requirements, establishment of performance standards, and position description refinement.

Training of Indian tribes.--Assistance was furnished in developing presentations to Indian tribes on the Abandoned Mine Lands regulatory program.

Blaster training.--Papers on blaster training and certification were presented at the Coal Conference and Expo V (Louisville, Ky., October 1979), Third Annual Mining Institute (University of Alabama, April 1980), and the Sixth Annual Conference of the Society of Explosives Engineers (Tampa, Fla., February 1980).

Technical orientation seminars, exhibits.--Four sessions were conducted to acquaint OSM employees with technical problems and processes involved in surface mining and reclamation of surface-mined lands. A series of technical seminars was offered on the Act and the surface effects of underground mining. A field trip was organized for new OSM employees to study active and abandoned surface mines in western Maryland.

Audiovisual materials on surface mining and the natural environment were exhibited at the Northern Great Plains Reclamation Symposium (Billings, Mont., March 1980) and the Training Resources Applied to Mining Conference, Morgantown, W. Va., August 1980).

Interagency training.—An interagency Ad Hoc Committee on Surface Mining was hosted in July 1980. Over 20 representatives from various government agencies attended this session. Much interest was expressed in interagency sharing of instructional resources.

Abandoned Mine Lands.—A project description for an occupational development plan for four occupational groups in the Abandoned Mine Lands (AML) Directorate was developed. Jobs performed by AML appraisers, realty specialists, project officers, and reclamation specialists will be analyzed, procedures used for task accomplishment will be identified, and job aids will be developed. This study will result in a prototype occupational development plan for use by OSM and State AML administrators.

#### MANAGEMENT AND BUDGET

Management and Budget is responsible for formulating policy and providing guidance for agency-wide budget matters. The Assistant Director is responsible for the development and presentation of program and budget requests to the Department, the Office of Management and Budget, and the Congress. Management and Budget is also responsible for Headquarters office administrative support activities and the information and records management systems.

#### BUDGET

The Department of the Interior and Related Agencies Appropriations Act provided \$179.5 million for FY 1980. Of this, \$81.7 million was for financial assistance to the States, Mineral Institutes, and small-mine operators. The remaining \$97.8 million was for direct Federal programs. The estimated FY 1981 budget of \$175.3 million includes \$79.8 million in financial-assistance activities and \$95.5 million for Federal functions. (See table 8.)

#### CONFLICT OF INTEREST

The Act prohibits any Federal employee "performing any function or duty under this Act" from having "direct or indirect financial interest in underground or surface coal mining operations." Employees disclose their holdings at least annually. After a review of 1,828 individual financial holdings reports during the year, 16 OSM employees and 1 Bureau of Mines employee were required to divest themselves of prohibited financial interests.

#### MINORITY AND SMALL BUSINESS PROCUREMENT

OSM's minority and small business procurement activities exceeded the agency's socioeconomic goals in FY 1980. The Department of the Interior and Related Agencies Appropriation Act of 1980 included about \$20 million for prime contracts from OSM. OSM established goals that resulted in

procurements amounting to \$5,350,000 under preference programs, and these goals were more than met:

	<u>Goal</u>	<u>Accomplishment</u>
Small Business Program (SB)	\$3,000,000	\$14,869,000
Minority Business Enterprise Program (MBE)	2,000,000	5,143,000
Labor Surplus Area Program (LSA)	250,000	392,000
Women's Business Enterprise Program (WBE)	100,000	202,000

The largest contract in the history of OSM -- \$2.9 million for the Big Creek Utility District reclamation project in Grundy, Tenn. -- was awarded to Starling Enterprises, Inc., of Tucker, Ga., through the Small Business Administration under Section 8(a) of the Small Business Act, as amended by Public Law 95-507.

OSM also sponsored a pilot orientation seminar to promote participation by small and disadvantaged businesses in the Small Operator Assistance Program (SOAP).

#### PAPERWORK REDUCTION

In compliance with Executive Order 12174, and as a part of OSM's continuing efforts to minimize regulatory burdens, 321 reporting and recordkeeping requirements previously authorized under the Federal Reports Act were reviewed to further reduce the paperwork burden imposed on the public, coal mine operators, and State and local governments. Using statistical information submitted by States, and in consultation with surface coal mine operators, OSM's requirements were restudied in 1980 to determine whether they could be modified, consolidated, or eliminated.

#### TECHNICAL INFORMATION SERVICE CENTER

The Technical Information Service Center (TISC), which became operational in June 1980, classifies and maintains for public use a catalog of mining and mineral-resources research and investigation projects funded by OSM and other government agencies. Scientific and technical information on surface coal mining, reclamation, and surface impacts of underground mining is also provided to industry and others through the TISC.

#### EQUAL OPPORTUNITY PROGRAM

In 1980, OSM's Equal Opportunity Program focused primarily on activities designed to satisfy requirements newly established by the Civil Service Reform Act of 1978 (Public Law 95-454). This included the development and implementation of plans for an Affirmative Action Program and a Federal Equal Opportunity Recruitment Program for each Region and the Headquarters office.

The plans, established to address the underrepresentation of women and minority employees in the work force, identified specific recruitment targets and strategies. They called for a blend of nontraditional employment procedures, and the increased use of upward-mobility assignments, cooperative education agreements, Young Adult Conservation Corps joint ventures, and the like. To support these program activities, the Headquarters Equal Opportunity Staff prepared and conducted training sessions for supervisors and managers in each regional office and the Headquarters office. The participants were provided a thorough briefing on their personal equal opportunity responsibilities, and an orientation on program elements such as the Federal Women's Program, the Hispanic Employment Program, and the Affirmative Action Program planning process.

OSM took several important steps this year in response to the President's Executive Order advising Federal agencies to support historically black institutions and to ensure that they receive equal consideration for inclusion in applicable grant and contract programs. A prototype session was hosted with representatives from Tuskegee Institute and Alabama A&M University, in which participants exchanged information on operating conditions, program directions, and projected needs. This meeting is the first of a series planned with black colleges and universities to examine how OSM can most effectively balance mission requirements with the President's objectives. In another vein, two OSM professional employees began Intergovernmental Development Program assignments at Howard University in Washington, D.C.

Equal Opportunity Program activities during 1980 resulted in an increase in the staffing of women and minority employees within the OSM work force. Of particular note is the placement of five Hispanic women into permanent positions at Headquarters, through the auspices of the Inter-Agency Hispanic Placement Program, sponsored by the Office of Personnel Management.

Another significant achievement is the selection of two OSM women as participants in the Interior Department's Executive Management Development Program, which is designed to help high-potential employees develop in order to meet the future staffing needs of the Senior Executive Service. Competition is keen for these assignments. One of the women, a GS-15 chosen for Feeder Group I, is among only 37 employees selected from 1,000 applicants.

#### HEARINGS AND APPEALS

The Secretary of the Interior has the obligation under the Act to provide administrative review of OSM's actions, including the opportunity for hearings governed by the Administrative Procedure Act (APA). The administrative review function of the Secretary has been delegated to the Department's Office of Hearing and Appeals (OHA).

OHA consists of a Hearings Division -- staffed by administrative law judges who hold hearings under the APA -- and several appeals boards established to review appeals arising from initial decisions of

administrative law judges or from decisions of certain program bureaus within the Department of the Interior. To avoid conflicts, OHA is not part of OSM.

The headquarters for OHA is in Arlington, Va., where the chief administrative law judge and an administrative law judge charged with OSM matters maintain their offices. Four Hearings Division field offices, each staffed by an administrative law judge, were established to expeditiously handle OSM matters in the eastern and midwestern United States. Those offices are located in Pittsburgh, Pa; Charleston, W. Va., Knoxville, Tenn., and Louisville, Ky. Field offices in Salt Lake City, Utah, and Sacramento, Calif., provide administrative law judges to conduct hearings in the western United States.

The Board of Surface Mining and Reclamation Appeals, composed of three board members and a legal staff, also is located in Arlington, Va. The Board performs the appellate functions of the Secretary under the Act.

Appeals to the Board during the initial regulatory program have involved--

- o Petitions for review of proposed assessments of civil penalties issued by OSM;
- o Applications for review of notices of violation and cessation orders or modifications, vacations, or terminations of such notices or orders;
- o Applications for temporary relief;
- o Petitions for awards of costs and expenses;
- o Certification of interlocutory rulings or interlocutory appeals.

In addition, any person adversely affected by a written decision of the Director of OSM, or a delegate of the Director, may appeal to the Board directly where the decision specifically grants such right to appeal.

Administrative review under the Act has presented the administrative law judges and the Board with a variety of issues for resolution. Many procedural questions have arisen, and through the decisions of the Board the various procedural regulations which guide parties in the review process before OHA have been applied and clarified. The Board, for example, has ruled on--

- o Various time limits for filing documents;
- o The burden of proof in review proceedings;
- o The authority of OSM to take action in a case while it is under review;
- o The requirement that a proposed assessment be paid into escrow prior to obtaining review in a civil penalty proceeding;
- o The availability of attorneys' fees for a permittee who prevailed before the Board; and
- o The evidence necessary to support an application for temporary relief.

The substantive issues in cases appealed to the Board have also varied, and they involved--

- o Backfilling and grading requirements, including those concerning approximate original contour, highwall elimination, and spoil on the downslope;

- o Tipples and preparation plants--whether they constitute surface coal mining operations subject to regulation by OSM;
- o Topsoil handling and the approval necessary to substitute alternative materials;
- o Haul-road and sign and marker maintenance;
- o Water-quality standards and requirements, including effluent limitations and sedimentation ponds; and
- o Valley and head-of-hollow fill construction.

In 1980, in addition to the issues outlined above, the Board addressed such issues as--

- o When an OSM inspector must present credentials during an inspection;
- o What constitutes "reasonable specificity" for purposes of the statutory requirement that a notice of violation must set forth with reasonable specificity the nature of the alleged violation and the required remedial action;
- o What the proper sanction is for interfering with an inspector;
- o Who the proper party is in issuance of a notice of violation;
- o What constitutes the downslope in a multiple-highwall operation; and
- o What constitutes "at or near the minesite" for purposes of the regulation that requires authorization to operate to be available for inspection at or near the minesite.

ALABAMA

COAL PRODUCTION: 25,074,772 tons.  
 NUMBER OF MINES: 834 surface; 30 underground; 14 support facilities.  
 REGULATORY AGENCY: Surface Mining Reclamation Commission.  
 LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act.  
 STATUS OF PROGRAM: Disapproved Oct. 16, 1980; enjoined Nov. 12, 1980,  
 for 1 year.

\$726,436 grant for initial-program support.

SOAP: 125 eligible operators, 35 applied for assistance, 12 approved. 20  
 laboratories approved.

\$33,172 grant for administration.  
 \$2,500,000 grant for operations.

I&E: Most common violation involved hydrologic impact.

2,216 inspections.  
 513 notices of violation.  
 154 cessation orders.  
 73 citizen complaints.

AML: \$14,956,587 reclamation fees. 10 projects, \$889,400  
 obligated. 1/

\$574,230 for national inventory of abandoned mine land.  
 \$176,300 for State reclamation plan.  
 \$155,100 for annual work plan.

MINERAL INSTITUTE: University of Alabama, University.

\$110,000 grant for operations.  
 \$200,063 grant for 2 research projects.

ALASKA

COAL PRODUCTION: 703,824 tons.  
 NUMBER OF MINES: 1 surface.  
 REGULATORY AGENCY: Department of Natural Resources.  
 STATUS OF PROGRAM: Submission of program expected in 1981.

1/ Project data are for FY 1978-80.

\$100,000 grant for permanent-program development.

I&E: 0 inspections.

AML: \$698,373 reclamation fees. 0 projects.<sup>1/</sup>

MINERAL INSTITUTE: University of Alaska, Fairbanks.

\$82,500 grant for operations.

\$53,541 grant for 1 research project.

ADDITIONAL INFORMATION: Section 708 of the Act requires an in-depth study of surface coal mining conditions in Alaska by the National Academy of Sciences-National Academy of Engineering to determine which, if any, of the provisions of the Act should be modified with regard to operations in Alaska. The final report was submitted to OSM in October 1980.

ARIZONA (See also HOPI INDIAN RESERVATION and NAVAJO INDIAN RESERVATION)

COAL PRODUCTION: None from non-Indian lands.

REGULATORY AGENCY: Arizona State Land Department.

MINERAL INSTITUTE: University of Arizona, Tucson.

\$82,500 grant for operations.

\$302,492 grant for 5 research projects.

ARKANSAS ✓

COAL PRODUCTION: 237,813 tons.

NUMBER OF MINES: 11 surface.

REGULATORY AGENCY: Department of Pollution Control and Ecology.

LAW RELATED TO PROGRAM: Surface Coal Mining and Reclamation Act, 1979.

STATUS OF PROGRAM: Conditionally approved Nov. 21, 1980. 81

\$198,971 grant for initial-program support.

SOAP: 3 eligible operators, 0 applied for assistance. 3 laboratories approved.

\$20,798 grant for administration.

\$49,525 grant for operations.

<sup>1/</sup> Project data are for FY 1978-80.

I&E: Most common violation involved failure to abate previously cited violations.

210	inspections.
25	notices of violation.
17	cessation orders.
5	citizen complaints.

AML: \$281,177 reclamation fees; 7 projects, \$49,800  
obligated. 1/

\$73,918	for national inventory of abandoned mine land.
\$60,000	for State reclamation plan.

### CALIFORNIA

COAL PRODUCTION: None.

REGULATORY AGENCY: Department of Conservation.

SOAP: 6 laboratories approved.

MINERAL INSTITUTE: University of California, Berkeley.

\$82,500	grant for operations.
\$280,122	grant for 5 research projects.

### COLORADO

COAL PRODUCTION: 18,271,990 tons.

NUMBER OF MINES: 34 surface; 32 underground.

REGULATORY AGENCY: Mined Land Reclamation Division of Department of Natural Resources, in conjunction with Mined Land Reclamation Board.

LAW RELATED TO PROGRAM: Surface Coal Mining and Reclamation Act of 1979.

STATUS OF PROGRAM: Conditionally approved Dec. 15, 1980. 81

\$366,447	grant for initial-program support.
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SOAP: 16 eligible operators, 0 applied for assistance. 14 laboratories approved.

\$29,182	grant for administration.
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1/ Project data are for FY 1978-80.

I&E: Most common violation involved sedimentation ponds.

159	inspections.
36	notices of violation.
3	cessation orders.
2	citizen complaints.

AML: \$11,986,985 reclamation fees. 17 projects, \$163,900  
obligated. <sup>1/</sup>

\$50,000	for national inventory of abandoned mine land.
\$688,674	for State reclamation plan.

MINERAL INSTITUTE: Colorado School of Mines, Golden.

\$82,500	grant for operations.
\$248,714	grant for 6 research projects.

CROW INDIAN RESERVATION (MONTANA)

COAL PRODUCTION: 3,398,715 tons.

NUMBER OF MINES: 1 surface.

REGULATORY AGENCY: U.S. Office of Surface Mining Reclamation and Enforcement (OSM).

LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act of 1977. Draft legislation, prepared in response to Section 710(a) of the Act and based studies by the Council of Energy Resources Tribes (CERT) and the Department's Office of the Solicitor, is expected to be submitted to Congress in 1981.

I&E:	2	inspections.
	0	notices of violation.
	0	cessation orders.
	0	citizen complaints.

AML: \$3,782,879 reclamation fees. 0 projects. <sup>1/</sup>  
50,000 for national inventory of abandoned mine land.

ADDITIONAL INFORMATION: The coal mining operation is located on the Crow Ceded Strip.

FLORIDA

SOAP: 15 laboratories approved.

<sup>1/</sup> Project data are for FY 1978-80.

GEORGIA

COAL PRODUCTION: 21,896 tons.  
 NUMBER OF MINES: 11 surface.  
 REGULATORY AGENCY: U.S. Office of Surface Mining Reclamation and Enforcement, (OSM).

LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act of 1977. A Federal program for Georgia will supersede any State laws and regulations that are less stringent than the Act and the program, and will incorporate any that are more stringent.

STATUS OF PROGRAM: Georgia has elected not to submit a permanent regulatory program.

SOAP: 2 eligible operators, 0 applied for assistance. 11 laboratories approved.

I&E: Most common violation involved failure to reclaim.

32	inspections.
16	notices of violation.
6	cessation orders.
1	citizen complaints.

AML: \$22,817 reclamation fees. 0 projects.<sup>1/</sup>

MINERAL INSTITUTE: Georgia Institute of Technology, Atlanta.  
 \$160,000 grant for scholarships/fellowships for 3-year period.  
 \$110,000 grant for operations.  
 \$67,798 grant for 1 research project.

HOPI INDIAN RESERVATION (ARIZONA)

COAL PRODUCTION: 1,371,467 tons.  
 NUMBER OF MINES: 1 surface.  
 REGULATORY AGENCY: U.S. Office of Surface Mining Reclamation and Enforcement (OSM).

LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act of 1977. Draft legislation, prepared in response to Section 710(a) of the Act and based on studies by the Council of Energy Resources Tribes (CERT) and the Department's Office of the Solicitor, is expected to be submitted to Congress in 1981.

<sup>1/</sup> Project data are for FY 1978-80.

I&E: Most common violation involved topsoil handling.

2	inspections.
1	notices of violation.
0	cessation orders.
0	citizen complaints.

AML: \$1,224,108 reclamation fees. 0 projects.<sup>1/</sup>

### IDAHO

MINERAL INSTITUTE: University of Idaho, Moscow.

\$82,500	grant for operations.
\$49,656	grant for 1 research project.

### ILLINOIS

COAL PRODUCTION: 62,582,266 tons.

NUMBER OF MINES: 144 surface; 40 underground; 113 support facilities.

REGULATORY AGENCY: Department of Mines and Minerals.

LAW RELATED TO PROGRAM: Public Act 81-1015, the Surface Coal Mining Land Conservation and Reclamation Act.

STATUS OF PROGRAM: Partially approved/partially disapproved Oct. 31, 1980; enjoined Dec. 11, 1980, for 1 year.

\$1,638,134 grant for initial-program support.

SOAP: 20 eligible operators, 10 applied for assistance, 8 approved. 23 laboratories approved.

\$312,000 grant for operations.

I&E: Most common violation involved failure to meet water-quality effluent standards.

919	inspections.
134	notices of violation.
7	cessation orders.
8	citizen complaints.

AML: \$36,714,686 reclamation fees. 34 projects, \$1,919,800 obligated.<sup>1/</sup>

\$104,774	for national inventory of abandoned mine land.
\$130,000	for State reclamation plan.
\$951,754	for annual work plan.

<sup>1/</sup> Project data are for FY 1978-80.

MINERAL INSTITUTE: Southern Illinois University, Carbondale.

\$82,500  
\$608,707

grant for operations.  
grant for 7 research projects.

### INDIANA

COAL PRODUCTION: 29,793,775 tons.

NUMBER OF MINES: 329 surface; 4 underground; 41 support facilities.

REGULATORY AGENCY: Department of Natural Resources, Division of Reclamation.

LAW RELATED TO PROGRAM: Indiana Enrolled Act No. 98.

STATUS OF PROGRAM: Partially approved/partially disapproved Nov. 25, 1980; enjoined July 29, 1980 (after program submitted to OSM for review, and before decision of Secretary) for 1 year.

SOAP: 30 eligible operators, 2 applied for assistance, 2 approved. 17 laboratories approved.

I&E: Most common violation involved failure to meet water-quality effluent standards.

1,318	inspections.
211	notices of violation.
81	cessation orders.
34	citizen complaints.

AML: \$24,350,760 obligated.<sup>1/</sup> reclamation fees. 9 projects, \$145,600

\$90,200 for national inventory of abandoned mine land.

MINERAL INSTITUTE: Purdue University, West Lafayette.

\$160,000  
period.  
\$110,000  
\$207,285

grant for scholarships/fellowships for 3-year  
grant for operations.  
grant for 2 research projects.

### IOWA

COAL PRODUCTION: 709,195 tons.

NUMBER OF MINES: 8 surface; 1 underground.

REGULATORY AGENCY: Department of Soil Conservation.

<sup>1/</sup> Project data are for FY 1978-80.

LAW RELATED TO PROGRAM: An Act Relating to Mining and Providing Penalties, 1979.

STATUS OF PROGRAM: Partially approved/partially disapproved Oct. 16, 1980.

\$22,500 grant for permanent-program development.

SOAP: 6 eligible operators, 3 applied for assistance, 2 approved. 3 laboratories approved.

\$4,000 grant for administration.  
\$63,040 grant for operations.

I&E: Most common violation involved sedimentation ponds.

61 inspections.  
15 notices of violation.  
2 cessation orders.  
0 citizen complaints.

AML: \$454,492 reclamation fees. 4 projects, \$121,300  
obligated.<sup>1/</sup>

MINERAL INSTITUTE: Iowa State University, Ames.

\$160,000 grant for scholarships/fellowships for 3-year  
period.

\$110,000 grant for operations.  
\$50,948 grant for 1 research project.

### KANSAS

COAL PRODUCTION: 875,754 tons.

NUMBER OF MINES: 11 surface.

REGULATORY AGENCY: State Corporation Commission, Mined Land Conservation and Reclamation Board.

LAW RELATED TO PROGRAM: Mined-Land Conservation and Reclamation Act of 1979.

STATUS OF PROGRAM: Partially approved/partially disapproved Sept. 4, 1980.

\$174,734 grant for initial-program support.  
\$4,800 grant for permanent-program development.

SOAP: 2 eligible operators, 1 applied for assistance, 1 approved. 6 laboratories approved.

<sup>1/</sup> Project data are for FY 1978-80.

I&E: Most common violation involved topsoil handling

175	inspections.
7	notices of violation.
0	cessation order.
1	citizen complaint.

AML: \$942,995  
obligated.<sup>1/</sup>

reclamation fees. 4 projects, \$1,165,000

\$85,620  
\$28,800

for national inventory of abandoned mine land.  
for State reclamation plan.

### KENTUCKY

COAL PRODUCTION: 142,479,018 tons.

NUMBER OF MINES: 3,249 surface; 1,229 underground; 522 support facilities.

REGULATORY AGENCY: Department for Natural Resources and Environmental Protection.

LAW RELATED TO PROGRAM: KRS Chapters 224 and 350, revised September 7, 1978.

STATUS OF PROGRAM: Partially approved Oct. 22, 1980; enjoined Oct. 31, 1980, for 1 year.

\$3,884,191  
\$240,000

grant for initial-program support.  
grant for permanent-program development.

SOAP: 700 eligible operators, 139 applied for assistance, 112 approved. 41 laboratories approved.

\$7,700,000

grant for operations.

I&E: Most common violation involved hydrologic impact.

9,721	inspections.
2,559	notices of violation.
543	cessation orders.
352	citizen complaints.

AML: \$86,205,857  
obligated.<sup>1/</sup>

reclamation fees. 41 projects, \$11,939,400

\$1,249,888

for national inventory of abandoned mine land.

MINERAL INSTITUTE:

University of Kentucky, Lexington.

\$82,500  
\$379,536

grant for operations.  
grant for 6 research projects.

<sup>1/</sup> Project data are for FY 1978-80.

LOUISIANA

COAL PRODUCTION: None.

REGULATORY AGENCY: Department of Natural Resources, Office of Conservation.

LAW RELATED TO PROGRAM: Louisiana Surface Mining and Reclamation Act, as amended.

STATUS OF PROGRAM: Approved October 10, 1980.

MINERAL INSTITUTE: Louisiana State University, Baton Rouge.

\$160,000 grant for scholarships/fellowships for 3-year period.

\$110,000 grant for operations.

\$72,510 grant for 1 research project.

MARYLAND

COAL PRODUCTION: 3,013,593 tons.

NUMBER OF MINES: 134 surface, 6 underground, 23 support facilities.

REGULATORY AGENCY: Department of Natural Resources, Energy Administration.

LAWS RELATED TO PROGRAM: Maryland Strip Mining Law, Maryland Environmental Standing Act, Maryland Ethics Law.

STATUS OF PROGRAM: Conditionally approved Dec. 1, 1980.

\$142,751 grant for initial-program support.

SOAP: 40 eligible operators, 9 applied for assistance, 9 approved. 5 laboratories approved.

\$35,000 grant for administration.

\$300,000 grant for operations.

I&E: Most common violation involved sedimentation ponds.

405 inspections.

53 notices of violation.

2 cessation orders.

2 citizen complaints.

AML: \$2,121,372 reclamation fees. 2 projects, \$1,164,700 obligated.<sup>1/</sup>

<sup>1/</sup> Project data are for FY 1978-80.

MASSACHUSETTS

COAL PRODUCTION: None.

REGULATORY AGENCY: U.S. Office of Surface Mining Reclamation and Enforcement (USM).

LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act of 1977.

STATUS OF PROGRAM: A Federal coal-exploration program is being developed by USM.

MINERAL INSTITUTE: Massachusetts Institute of Technology, Cambridge.

\$82,500 grant for operations.  
\$227,183 grant for 4 research projects.

MICHIGAN

COAL PRODUCTION: None.

REGULATORY AGENCY: U.S. Office of Surface Mining Reclamation and Enforcement (USM).

LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act of 1977.

STATUS OF PROGRAM: A Federal coal-exploration program is being developed by USM.

SOAP: 4 laboratories approved.

AML: \$75,930 for national inventory of abandoned mine land.

MINERAL INSTITUTE: Michigan Technological University, Houghton.

\$110,000 grant for operations.  
\$270,123 grant for 4 research projects.

MINNESOTA

MINERAL INSTITUTE: University of Minnesota, Minneapolis.

\$82,500 grant for operations.  
\$105,488 grant for research.

MISSISSIPPI

COAL PRODUCTION: None.

REGULATORY AGENCY: Department of Natural Resources.

LAW RELATED TO PROGRAM: Surface Coal Mining and Reclamation Act of 1979.

STATUS OF PROGRAM: Approved Sept. 4, 1980.

MINERAL INSTITUTE: University of Mississippi, University.

\$82,500 grant for operations.  
\$104,789 grant for 1 research project.

MISSOURI

COAL PRODUCTION: 5,639,242 tons.

NUMBER OF MINES: 15 surface.

REGULATORY AGENCY: Department of Natural Resources.

LAW RELATED TO PROGRAM: Surface Coal Mining Act.

STATUS OF PROGRAM: Conditionally approved Nov. 21, 1980.

\$494,925 grant for initial-program support.

SOAP: 3 eligible operators, 3 applied for assistance, 3 approved. 7 laboratories approved.

I&E: Most common violation involved sedimentation ponds.

208 inspections.  
16 notices of violation.  
3 cessation orders.  
8 citizen complaints.

AML: \$5,417,439 reclamation fees. 4 projects. \$4,218,000 obligated.<sup>1/</sup>

\$198,123 for national inventory of abandoned mine land.

MINERAL INSTITUTE: University of Missouri, Rolla.

\$82,500 grant for operations.  
\$169,734 grant for 4 research projects.

<sup>1/</sup> Project data are for FY 1978-80.

MONTANA (See also CROW INDIAN RESERVATION)

COAL PRODUCTION: 28,717,317 tons.

NUMBER OF MINES: 11 surface; 1 underground.

REGULATORY AGENCY: Department of State Lands.

LAW RELATED TO PROGRAM: Strip and Mine Reclamation Act of 1973, as amended July 1, 1979.

STATUS OF PROGRAM: Conditionally approved April 1, 1980.

\$106,509 grant for initial-program support.  
 \$682,383 grant for permanent program administration and enforcement.

SOAP: 8 eligible operators, 3 applied for assistance. 7 laboratories approved.

\$13,783 grant for administration.  
 \$57,335 grant for operations.

I&E: Most common violation involved sedimentation ponds.

19 inspections.  
 3 notices of violation.  
 0 cessation orders.  
 1 citizen complaints.

AML: \$23,588,779 reclamation fees. 7 projects, \$410,100 obligated.<sup>1/</sup>

\$57,780 for national inventory of abandoned mine land.

MINERAL INSTITUTE: Montana College of Mineral Science and Technology, Butte.

\$82,500 grant for operations.  
 \$244,046 grant for 4 research projects.

NAVAJO INDIAN RESERVATION (ARIZONA)

COAL PRODUCTION: 10,089,356 tons.

NUMBER OF MINES: 1 surface.

REGULATORY AGENCY: U.S. Office of Surface Mining Reclamation and Enforcement (OSM).

LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act of 1977. Draft legislation, prepared in response to Section 710(a) of the Act and based on studies by the Council of Energy Resources Tribes (CERT) and the Department's Office of the Solicitor, is expected to be submitted to Congress in 1981.

<sup>1/</sup> Project data are for FY 1978-80.

I&E (Arizona and New Mexico operations combined): Most common violation involved topsoil handling.

9	inspections.
1	notices of violations.
0	cessation orders.
0	citizen complaints.

AML (Arizona and New Mexico operations combined):

\$7,899,354	reclamation fees. 0 projects. <sup>1/</sup>
\$17,000	for national inventory of abandoned mine land.

NAVAJO INDIAN RESERVATION (NEW MEXICO)

COAL PRODUCTION: 10,237,158 tons.  
 NUMBER OF MINES: 4 surface.  
 REGULATORY AGENCY: See Navajo, Arizona, operation.  
 LAW RELATED TO PROGRAM: See Navajo, Arizona, operation.  
 I&E: See Navajo, Arizona, operation.  
 AML: See Navajo, Arizona, operation.

NEBRASKA

SOAP: 1 laboratory approved.

NEVADA

MINERAL INSTITUTE: University of Nevada, Reno.  
 \$160,000 grant for scholarships/fellowships for 3-year  
 period.  
 \$110,000 grant for operations.  
 \$48,515 grant for 2 research projects.

NEW JERSEY

SOAP: 2 laboratories approved.

<sup>1/</sup> Project data are for FY 1978-80.

NEW MEXICO (See also NAVAJO INDIAN RESERVATION)

COAL PRODUCTION: 7,011,818 tons.

NUMBER OF MINES: 9 surface; 3 underground.

REGULATORY AGENCY: Mining and Minerals Division, Energy and Minerals Department.

LAW RELATED TO PROGRAM: Surface Mining Act of 1979.

STATUS OF PROGRAM: Conditionally approved Dec. 31, 1980.

\$303,681 grant for initial-program support.  
\$ 99,235 grant for permanent-program development.

SOAP: 3 eligible operators, 1 applied for assistance, 1 approved. 2 laboratories approved.

I&E Most common violation involved topsoil handling.

36 inspections.  
3 notices of violation.  
1 cessation orders.  
0 citizen complaints.

AML: \$4,916,324 reclamation fees. 13 projects, \$285,900 obligated.<sup>1/</sup>

\$64,875 for national inventory of abandoned mine land.

MINERAL INSTITUTE: New Mexico Institute of Mining and Technology, Socorro.

\$82,500 grant for operations.  
\$223,763 grant for 5 research projects.

NORTH CAROLINA

SOAP: 2 laboratories approved.

NORTH DAKOTA

COAL PRODUCTION: 16,739,179 tons.

NUMBER OF MINES: 14 surface.

<sup>1/</sup> Project data are for FY 1978-80.

REGULATORY AGENCY: Public Service Commission.  
 LAW RELATED TO PROGRAM: Surface Mine Reclamation Act of 1969.  
 STATUS OF PROGRAM: Conditionally approved Dec. 15, 1980.  
                   \$124,074 grant for initial-program support.  
                   \$172,518 grant for permanent-program development.

SOAP: 5 eligible operators, 0 applied for assistance.

I&E: Most common violation involved sedimentation ponds.

23	inspections.
3	notices of violation.
0	cessation orders.
0	citizen complaints.

AML: \$3,813,297 reclamation fees. 5 projects, \$871,800  
 obligated.<sup>1/</sup>  
                   \$128,123 for national inventory of abandoned mine land.  
                   \$250,801 for State reclamation plan.

MINERAL INSTITUTE: University of North Dakota, Grand Forks.  
                   \$160,000 grant for scholarships/fellowships for 3-year  
 period.  
                   \$110,000 grant for operations.  
                   \$54,760 grant for 1 research project.

#### OHIO

COAL PRODUCTION: 41,715,835 tons.  
 NUMBER OF MINES: 982 surface; 35 underground; 33 support  
 facilities.  
 REGULATORY AGENCY: Department of Natural Resources.  
 LAW RELATED TO PROGRAM: Ohio Coal Mining Law, Chapter 1513, Ohio Revised  
 Code.  
 STATUS OF PROGRAM: Disapproved Oct. 1, 1980; enjoined Nov. 25, 1980, for  
 1 year.

\$1,029,093 grant for initial-program support.

SOAP: 80 eligible operators, 54 applied for assistance, 54 approved.  
 26 laboratories approved.

\$65,783	grant for administration.
\$2,500,000	grant for operations.

<sup>1/</sup> Project data are for FY 1978-80.

I&E: Most common violation involved failure to meet water-quality effluent standards.

3,356	inspections.
804	notices of violation.
147	cessation orders.
34	citizen complaints.
AML: \$31,304,140	reclamation fees, 39 projects, \$7,008,400
obligated. <sup>1/</sup>	
\$187,880	for national inventory of abandoned mine land.
MINERAL INSTITUTE:	Ohio State University, Columbus.
\$82,500	grant for operations.
\$146,605	grant for 3 research projects.

OKLAHOMA

COAL PRODUCTION:	5,385,206 tons.
NUMBER OF MINES:	55 surface; 1 underground.
REGULATORY AGENCY:	Department of Mines.
LAW(S) RELATED TO PROGRAM:	Coal Reclamation Act of 1979.
STATUS OF PROGRAM:	Partially approved/partially disapproved Oct. 10, 1980; enjoined Dec. 22, 1980, for 6 months.
\$379,478	grant for initial-program support.
SOAP: 20 eligible operators, 1 applied for assistance, 0 approved. 8 laboratories approved.	
I&E: Most common violation involved signs and markers.	
411	inspections.
70	notices of violation.
8	cessation orders.
27	citizen complaints.
AML: \$4,815,047	reclamation fees, 4 projects, \$140,000 obligated. <sup>1/</sup>
\$145,204	for national inventory of abandoned mine land.
MINERAL INSTITUTE:	University of Oklahoma, Norman.
\$82,500	grant for operations.
\$54,027	grant for 1 research project.

<sup>1/</sup> Project data are for FY 1978-80.

OREGON

COAL PRODUCTION: None.

REGULATORY AGENCY: U.S. Office of Surface Mining Reclamation and Enforcement (OSM).

LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act of 1977.

STATUS OF PROGRAM: Federal coal-exploration program being developed by OSM.

SOAP: 1 eligible operator, 0 applied for assistance; 1 laboratory approved.

I&E:                   2       inspections.  
                           0       notices of violation.  
                           0       cessation orders.  
                           0       citizen complaints.

PENNSYLVANIA

COAL PRODUCTION: 91,596,282 tons.

NUMBER OF MINES: Bituminous--3,019 surface, 6 underground, 23 support facilities; anthracite--321 surface, 92 underground, 80 support facilities.

REGULATORY AGENCY: Department of Environmental Resources.

LAWS RELATED TO PROGRAM: Coal Refuse Disposal Control Act, Surface Mining Conservation and Reclamation Act, Bituminous Mine Subsidence Land and Conservation Act, Clean Stream Law.

STATUS OF PROGRAM: Disapproved Oct. 22, 1980; enjoined Nov. 26, 1980, for 1 year.

\$2,611,075       grant for initial-program support.

SOAP: 200 eligible operators; 7 applied for assistance, 5 approved. 68 laboratories approved.

I&E: Most common violation involved sedimentation ponds.

                      7,305       inspections.  
                       1,081       notices of violation.  
                       98       cessation orders.  
                       385       citizen complaints.

AML: \$57,876,716       reclamation fees, 85 projects, \$19,637,600 obligated.<sup>1/</sup>

<sup>1/</sup> Project data are for FY 1978-80.

\$1,113,700 for national inventory of abandoned mine land.  
 \$259,820 for State reclamation plan.

MINERAL INSTITUTE: Pennsylvania State University, University Park.

\$82,500 grant for operations.  
 \$401,694 grant for 9 research projects.

#### RHODE ISLAND

COAL PRODUCTION: None.

REGULATORY AGENCY: U.S. Office of Surface Mining Reclamation and Enforcement (OSM).

LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act of 1977.

STATUS OF PROGRAM: A Federal coal-exploration program is being developed by OSM.

AML: 1 project, \$3,000 obligated.<sup>1/</sup>

#### SOUTH CAROLINA

SOAP: 2 laboratories approved.

#### SOUTH DAKOTA

MINERAL INSTITUTE: South Dakota School of Mines and Technology, Rapid City.

\$160,000 grant for scholarships/fellowships for 3-year period.

\$110,000 grant for operations.  
 \$71,970 grant for 1 research project.

#### TENNESSEE

COAL PRODUCTION: 9,503,010 tons.

NUMBER OF MINES: 603 surface; 129 underground; 58 support facilities.

<sup>1/</sup> Project data are for FY 1978-80.

REGULATORY AGENCY: Department of Conservation.

LAW RELATED TO PROGRAM: Tennessee Coal Surface Mining Law of 1980.

STATUS OF PROGRAM: Partially approved/partially disapproved Oct. 10, 1980, enjoined Dec. 5, 1980, for 3 months.

\$422,200 grant for initial-program support.

SOAP: 150 eligible operators, 19 applied for assistance, 10 approved. 16 laboratories approved.

I&E: Most common violation involved hydrologic impact.

1,710	inspections.
481	notices of violation.
256	cessation orders.
64	citizen complaints.

AML: \$6,108,172 reclamation fees, 4 projects, \$3,513,700 obligated.<sup>1/</sup>

\$240,000	for national inventory of abandoned mine land.
\$63,446	for annual work plan.

TEXAS

COAL PRODUCTION: 28,261,972 tons.

NUMBER OF MINES: 12 surface.

REGULATORY AGENCY: Railroad Commission of Texas.

LAW RELATED TO PROGRAM: Surface Coal Mining and Reclamation Act.

STATUS OF PROGRAM: Approved Nov. 26, 1980.

\$305,623 grant for permanent-program administration and enforcement.

SOAP: 0 eligible operators. 7 laboratories approved.

I&E: Most common violation involved topsoil handling.

17	inspections.
3	notices of violation.
1	cessation order.
0	citizen complaints.

AML: \$6,094,834 reclamation fees, 3 projects, \$759,000 obligated.<sup>1/</sup>

\$88,000	for national inventory of abandoned mine land.
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<sup>1/</sup> Project data are for FY 1978-80.

MINERAL INSTITUTE: University of Texas, Austin.  
 \$82,500 grant for operations.  
 \$44,077 grant for 1 research project.

UTAH

COAL PRODUCTION: 11,830,623 tons.  
 NUMBER OF MINES: 26 underground.  
 REGULATORY AGENCY: Department of Natural Resources, Division of  
 Oil, Gas and Mining.  
 LAW RELATED TO PROGRAM: Coal Mining and Reclamation Act of 1979.  
 STATUS OF PROGRAM: Partially approved/partially disapproved Oct.  
 24, 1980.  
 \$272,457 grant for initial-program support.  
 \$31,007 grant for permanent-program development.

SOAP: 8 eligible operators, 0 applied for assistance; 2 laboratories  
 approved.

I&E: Most common violation involved spoil over downslope.

105 inspections.  
 24 notices of violation.  
 2 cessation orders.  
 1 citizen complaint.

AML: \$4,180,546 reclamation fees, 0 projects.<sup>1/</sup>

MINERAL INSTITUTE: University of Utah, Salt Lake City.  
 \$82,500 grant for operations.  
 \$250,586 grant for 4 research projects.

VIRGINIA

COAL PRODUCTION: 34,573,910 tons.  
 NUMBER OF MINES: 284 surface, 647 underground, 237 support  
 facilities.  
 REGULATORY AGENCY: Department of Conservation and Economic  
 Development.  
 LAW(S) RELATED TO PROGRAM: Virginia Coal Surface Mining Control and  
 Reclamation Act of 1979; amended 1980 by HB 943 and HB 944.

<sup>1/</sup> Project data are for FY 1978-80.

STATUS OF PROGRAM: Partially approved/partially disapproved Oct. 22, 1980; enjoined Dec. 3, 1980, for 1 year.

\$2,107,137 grant for initial-program support.

SOAP: 200 eligible operators, 16 applied for assistance, 12 approved. 20 laboratories approved.

\$69,138 grant for administration.  
\$325,000 grant for operations.

I&E: Most common violation involved sedimentation ponds.

2,300 inspections.  
453 notices of violation.  
80 cessation notices.  
51 citizen complaints.

AML: \$17,063,210 reclamation fees, 17 projects, \$4,311,900  
obligated. <sup>1/</sup>

~~\$263~~<sup>365</sup>,120 for national inventory of abandoned mine land.

MINERAL INSTITUTE: Virginia Polytechnic Institute and State University, Blacksburg.

\$160,000 grant for scholarships/fellowships for 3-year  
period.  
\$110,000 grant for operations.  
\$197,003 grant for 4 research projects.

#### WASHINGTON

COAL PRODUCTION: 5,111,446 tons.

NUMBER OF MINES: 3 surface.

REGULATORY AGENCY: U.S. Office of Surface Mining Reclamation and Enforcement (USM).

LAW RELATED TO PROGRAM: Surface Mining Control and Reclamation Act of 1977. A Federal program for Washington will supersede any State laws and regulations that are less stringent than the Act and the program, and will incorporate any that are more stringent.

STATUS OF PROGRAM: Washington elected not to submit a permanent regulatory program.

SOAP: 1 eligible operator, 0 applied for assistance, 1 laboratory approved.

1/ Project data are for FY 1978-80.

I&E: Most common violation involved sedimentation ponds.

6	inspections.
1	notice of violation.
0	cessation orders.
0	citizen complaints.

AML: \$4,722,011 reclamation fees, 5 projects, \$35,300  
obligated.<sup>1/</sup>

MINERAL INSTITUTE: University of Washington, Seattle.

period.	\$160,000	grant for scholarships/fellowships for 3-year
	\$110,000	grant for operations.
	\$29,184	grant for 1 research project.

#### WEST VIRGINIA

COAL PRODUCTION: 111,651,699 tons.

NUMBER OF MINES: 1,112 surface, 1,333 underground, 595 support  
facilities.

REGULATORY AGENCY: Department of Natural Resources.

LAW RELATED TO PROGRAM: Surface Coal Mining and Reclamation Act.

STATUS OF PROGRAM: Partially approved/partially disapproved Oct.  
20, 1980.

\$1,830,444	grant for initial-program support.
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SOAP: 450 eligible operators, 25 applied for assistance, 25 approved.  
34 laboratories approved.

\$1,633,862	grant for operations.
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I&E: Most common violation involved sedimentation ponds.

7,331	inspections.
988	notices of violation.
148	cessation orders.
80	citizen complaints.

AML: \$50,501,012 reclamation fees, 33 projects, \$7,036,000  
obligated.<sup>1/</sup>

\$643,051	for national inventory of abandoned mine land.
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MINERAL INSTITUTE: West Virginia University, Morgantown.

\$82,500	grant for operations.
\$120,721	grant for 2 research projects.

<sup>1/</sup>Project data are for FY 1978-80.

WISCONSIN

SOAP: 2 laboratories approved.

WYOMING

COAL PRODUCTION: 86,591,434 tons.

NUMBER OF MINES: 30 surface; 4 underground.

REGULATORY AGENCY: Department of Environmental Quality, Land Quality Division.

LAW RELATED TO PROGRAM: Environmental Quality Act of 1973.

STATUS OF PROGRAM: Conditionally approved Nov. 26, 1980.  
\$251,254 grant for permanent-program development.

SOAP: 6 eligible operators, 0 applied for assistance; 3 laboratories approved.

I&E: Most common violation involved topsoil handling.

69	inspections.
13	notices of violation.
0	cessation orders.
0	citizen complaints.

AML: \$65,662,801 reclamation fees, 8 projects, \$512,800 obligated.<sup>1/</sup>

\$1,297,882 for State reclamation plan.

MINERAL INSTITUTE: University of Wyoming, Laramie.

\$82,500	grant for operations.
\$14,370	grant for 1 research project.

<sup>1/</sup> Project data are for FY 1978-80.

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SOAP: 6 eligible operators, 0 applied for assistance, 3 laboratories approved.

I&E: Most common violation involved topsoil handling.

69	inspections.
13	notices of violation.
0	cessation orders.
0	citizen complaints.

AML: \$65,662,801 obligated. <sup>1/</sup> reclamation fees, 8 projects, \$512,800

\$1,297,882 for State reclamation plan.

MINERAL INSTITUTE: University of Wyoming, Laramie.

\$82,500	grant for operations.
\$14,370	grant for research project.

<sup>1/</sup> Project data are for FY 1978-80.

Table 2.--INITIAL- AND PERMANENT-PROGRAM GRANTS TO STATES, FY 1978-80.

State	Initial-program support grants				Permanent program				Total FY 1978-80	
	Development grants				Administration and enforcement grants					
	FY 1978	FY 1979	FY 1980	Total	FY 1978	FY 1979	FY 1980	Total		
Alabama-----	\$230,012	\$486,936	\$726,436	\$1,443,384	0	0	0	0	0	\$1,443,384
Alaska <sup>2/</sup> -----	0	0	0	0	0	0	\$100,000	\$100,000	0	100,000
Arizona <sup>3/</sup> -----	65,055	152,496	198,971	416,522	0	\$73,465	0	73,465	0	489,987
Arkansas-----	42,281	254,069	366,447	662,797	\$71,007	264,395	0	335,402	0	998,199
Colorado-----	398,435	1,000,000	1,638,134	3,036,569	0	0	0	0	0	3,036,569
Georgia <sup>4/</sup> -----	44,599	83,310	0	127,909	20,000	8,600	22,500	51,100	0	179,009
Illinois-----	48,379	95,343	174,734	318,456	0	41,632	4,800	46,432	0	364,888
Indiana <sup>5/</sup> -----	2,133,018	5,708,043	3,884,191	11,725,252	1,565,622	863,929	240,000	2,669,551	0	14,394,803
Iowa-----	0	0	0	0	0	102,811	0	102,811	0	102,811
Kansas-----	158,640	122,412	142,751	423,803	0	395,560	0	395,560	0	819,363
Kentucky-----	46,412	164,218	494,925	705,555	125,744	0	0	125,744	0	831,299
Louisiana-----	58,111	87,644	106,509	252,264	0	150,966	0	150,966	\$682,383	1,085,613
Maryland-----	67,742	139,744	303,681	511,167	0	149,954	99,235	249,189	0	760,356
Massachusetts-----	248,376	199,409	124,074	571,859	462,624	589,200	172,518	1,224,342	0	1,796,201
Michigan-----	370,542	1,500,000	1,029,093	2,899,635	0	0	0	0	0	2,899,635
Minnesota-----	121,182	468,249	379,478	968,909	205,462	0	0	205,462	0	1,174,371
Mississippi-----	58,111	87,644	106,509	252,264	0	0	0	0	0	3,896,597
Missouri-----	67,742	139,744	303,681	511,167	0	0	0	0	0	982,602
Montana-----	248,376	199,409	124,074	571,859	462,624	589,200	172,518	1,224,342	0	2,899,635
Nebraska-----	370,542	1,500,000	1,029,093	2,899,635	0	0	0	0	0	2,899,635
Nevada-----	121,182	468,249	379,478	968,909	205,462	0	0	205,462	0	1,174,371
New Hampshire-----	58,111	87,644	106,509	252,264	0	0	0	0	0	3,896,597
New Jersey-----	67,742	139,744	303,681	511,167	0	0	0	0	0	982,602
New Mexico-----	248,376	199,409	124,074	571,859	462,624	589,200	172,518	1,224,342	0	2,899,635
New York-----	370,542	1,500,000	1,029,093	2,899,635	0	0	0	0	0	2,899,635
North Carolina-----	121,182	468,249	379,478	968,909	205,462	0	0	205,462	0	1,174,371
North Dakota-----	58,111	87,644	106,509	252,264	0	0	0	0	0	3,896,597
Ohio-----	67,742	139,744	303,681	511,167	0	0	0	0	0	982,602
Oklahoma-----	248,376	199,409	124,074	571,859	462,624	589,200	172,518	1,224,342	0	2,899,635
Oregon-----	370,542	1,500,000	1,029,093	2,899,635	0	0	0	0	0	2,899,635
Pennsylvania-----	121,182	468,249	379,478	968,909	205,462	0	0	205,462	0	1,174,371
Rhode Island-----	58,111	87,644	106,509	252,264	0	0	0	0	0	3,896,597
Tennessee-----	67,742	139,744	303,681	511,167	0	0	0	0	0	982,602
Texas-----	248,376	199,409	124,074	571,859	462,624	589,200	172,518	1,224,342	0	2,899,635
Utah-----	370,542	1,500,000	1,029,093	2,899,635	0	0	0	0	0	2,899,635
Virginia <sup>4/</sup> -----	121,182	468,249	379,478	968,909	205,462	0	0	205,462	0	1,174,371
Washington <sup>4/</sup> -----	58,111	87,644	106,509	252,264	0	0	0	0	0	3,896,597
West Virginia-----	67,742	139,744	303,681	511,167	0	0	0	0	0	982,602
Wyoming-----	248,376	199,409	124,074	571,859	462,624	589,200	172,518	1,224,342	0	2,899,635
Total-----	6,096,930	14,895,507	16,812,737	37,805,174	3,025,073	3,155,267	921,314	\$7,101,654	988,006	45,894,834

1/ None awarded in FY 1978 and 1979.  
 2/ The Act requires a special study in Alaska to determine which provisions of the Act, if any, need modification before being applied in the State.  
 3/ No mining on non-Indian lands.  
 4/ State elected to not submit a permanent program.

Table 3.--SMALL OPERATOR ASSISTANCE PROGRAM GRANTS TO STATES, FY 1979-80 <sup>1/</sup>

State	Administration Grant			Operations Grant			Total		
	FY 1979	FY 1980	Total	FY 1979	FY 1980	Total	FY 1979	FY 1980	FY 1979-80
	Alabama-----	\$125,000	\$33,172	\$158,172	\$873,000	\$2,500,000	\$3,373,000	\$998,000	\$2,533,172
Arkansas-----	0	20,798	20,798	0	49,525	49,525	0	70,323	70,323
Colorado-----	0	29,182	29,182	0	0	0	0	29,182	29,182
Illinois-----	22,500	0	22,500	290,000	312,000	602,000	312,500	312,000	624,500
Iowa-----	0	4,000	4,000	0	63,040	63,040	0	67,040	67,040
Kansas-----	0	0	0	48,000	0	48,000	48,000	0	48,000
Kentucky-----	231,654	0	231,654	8,146,000	7,700,000	15,846,000	8,377,654	7,700,000	16,077,654
Maryland-----	26,523	35,000	61,523	145,000	300,000	445,000	171,523	335,000	506,523
Montana-----	0	13,783	13,783	0	57,335	57,335	0	71,118	71,118
Ohio-----	97,065	65,783	162,848	699,000	2,500,000	3,199,000	796,065	2,565,783	3,361,848
Oklahoma-----	0	0	0	208,600	0	208,600	208,600	0	208,600
Virginia-----	62,275	69,138	131,413	925,000	325,000	1,250,000	987,275	394,138	1,381,413
West Virginia---	111,947	0	111,947	582,000	1,633,862	2,215,862	693,947	1,633,862	2,327,809
Total-----	676,964	270,856	947,820	11,916,600	15,440,762	27,357,362	12,593,564	15,711,618	28,305,182

<sup>1/</sup> No grants were awarded in FY 1978.

Table 4.-- INSPECTION AND ENFORCEMENT ACTIVITIES, FY 1978-80.

State or Tribe	Number of--				Citizen complaints 1/						
	Inspections		Notices of violation		Cessation orders		Citizen complaints 1/				
	(2/)	FY 1979	FY 1980	(2/)	FY 1979	FY 1980	FY 1979	FY 1980			
Alabama-----	139	734	2,216	40	176	513	26	56	154	30	73
Alaska-----	0	0	0	0	0	0	0	0	0	0	0
Arizona 3/-----	24	73	210	8	10	25	5	6	17	0	5
Arkansas-----	16	91	159	4	38	36	0	4	3	0	2
Colorado-----	(4/)	(4/)	2	0	(4/)	0	0	0	0	0	0
Crow (Montana)-----	17	14	32	2	2	16	1	0	6	1	1
Georgia-----	1	0	2	0	0	1	0	0	0	0	0
Hopi (Arizona)-----	112	452	919	35	88	134	9	8	7	2	8
Illinois-----	140	576	1,318	83	135	211	5	20	81	24	34
Indiana-----	29	30	61	5	6	15	0	0	2	0	0
Iowa-----	34	74	175	1	10	7	0	0	0	5	1
Kansas-----	560	3,473	9,721	148	823	2,559	53	186	543	203	352
Kentucky-----	78	199	405	7	23	53	0	0	2	0	2
Maryland-----	37	106	208	9	16	16	1	8	3	2	8
Missouri-----	12	15	19	0	5	3	0	0	0	0	1
Montana 5/-----	1	0	9	0	0	1	0	0	0	0	0
Navajo (Arizona and New Mexico)-----	3	11	36	0	2	3	0	0	1	0	0
New Mexico 6/-----	12	16	23	1	5	3	0	0	0	2	0
North Dakota-----	106	751	3,356	79	272	804	12	25	147	19	34
Ohio-----	75	283	411	11	45	70	2	12	8	2	27
Oklahoma-----	1	1	2	0	0	0	0	0	0	0	0
Oregon-----	434	2,178	7,305	29	406	1,081	3	41	98	162	385
Pennsylvania-----	218	1,064	1,710	63	284	481	33	159	256	49	64
Tennessee-----	12	25	17	0	2	3	1	1	1	0	0
Texas-----	12	46	105	2	8	24	0	0	2	2	1
Utah-----	333	618	2,300	88	145	453	34	15	80	7	51
Virginia-----	3	4	6	0	0	1	0	0	0	0	0
Washington-----	357	3,053	7,331	43	537	988	7	61	148	44	80
West Virginia-----	11	42	69	0	17	13	0	0	0	0	0
Wyoming-----	2,777	13,932	38,129	658	3,055	7,514	193	602	1,559	554	1,130
Total-----											

1/ No data for FY 1978.  
 2/ May 29-Dec. 31, 1978.  
 3/ No mining on non-Indian land. See Hopi and Navajo.  
 4/ Included in Montana data.  
 5/ See also Crow.  
 6/ See also Navajo.

Table 5.--ABANDONED MINE RECLAMATION FUND, FY 1978-80.

State or Tribe	FY 1978		FY 1979		FY 1980		Total FY 1978-80	
	Revenue 1/	Allocation to 2/ State or Tribe	Revenue 1/	Allocation to 2/ State or Tribe	Revenue 1/	Allocation to 2/ State or Tribe	Revenue 1/	Allocation to 2/ State or Tribe
Alabama	\$2,643,499	\$1,321,750	\$5,761,849	\$2,880,924	\$6,551,240	\$3,275,620	\$14,956,587	\$7,478,294
Alaska	196,454	98,223	255,589	127,795	246,339	123,169	698,373	349,187
Arizona, 3/	75,860	37,970	127,827	63,914	77,490	38,745	281,177	140,588
Arkansas	2,483,731	1,241,866	4,466,179	2,232,090	5,039,074	2,519,537	11,986,985	5,993,492
Colorado	1,177,263	588,632	1,633,390	816,695	972,226	486,113	3,782,879	1,891,439
Crow (Montana)	10,061	(4/)	7,787	(4/)	4,969	(4/)	22,817	(4/)
Georgia	243,706	121,853	391,677	195,838	588,726	294,363	1,224,108	612,054
Hopi (Arizona)	6,656,436	3,328,218	14,795,667	7,397,834	15,262,563	7,631,291	36,714,686	18,357,343
Illinois	4,798,096	2,399,048	9,426,032	4,713,016	10,126,632	5,063,316	24,350,760	12,175,380
Indiana	87,161	43,580	144,780	72,390	222,552	111,276	454,492	227,246
Iowa	363,866	181,933	304,517	152,259	274,612	137,306	942,995	471,497
Kansas	20,385,020	10,192,510	31,177,345	15,588,673	34,643,492	17,321,746	86,205,857	43,102,928
Kentucky	500,230	250,115	793,270	396,635	827,871	413,936	2,121,372	1,060,686
Maryland	1,051,749	525,874	2,377,721	1,188,861	1,987,969	993,984	5,417,439	2,708,719
Missouri	5,374,402	2,687,201	10,827,453	5,413,727	7,386,924	3,693,462	23,588,779	11,794,390
Montana	3,336,586	1,668,293	4,809,881	2,404,940	7,899,354	3,949,677	16,045,821	8,022,911
Navajo (Arizona and New Mexico)	1,084,869	542,434	5,787,763	2,893,882	1,956,308	978,154	4,916,324	2,458,162
New Mexico 7/	915,061	457,530	1,260,368	630,184	1,637,859	818,934	3,813,297	1,906,649
North Dakota	7,500,967	3,750,484	11,911,196	5,955,598	11,891,977	5,945,988	31,304,140	15,652,070
Ohio	1,266,433	633,216	1,805,948	902,974	1,742,666	871,333	4,815,047	2,407,523
Oklahoma	12,323,125	6,161,562	22,949,563	11,474,782	22,604,029	11,302,014	57,876,716	28,938,358
Pennsylvania	1,636,494	818,247	2,048,049	1,024,025	2,423,628	1,211,814	6,108,172	3,054,086
Tennessee	1,157,651	578,826	2,295,434	1,147,717	2,641,749	1,320,875	6,094,834	3,047,417
Texas	768,151	384,076	1,571,424	785,712	1,840,971	920,485	4,180,546	2,090,273
Utah	4,505,809	2,252,905	5,933,957	2,966,979	6,623,444	3,311,722	17,063,210	8,531,605
Virginia	1,329,458	(4/)	1,603,547	(4/)	1,789,006	(4/)	4,722,011	(4/)
Washington	9,710,504	4,855,252	19,578,398	9,789,199	21,212,110	10,606,055	50,501,012	25,250,506
West Virginia	13,846,430	6,923,215	21,516,123	10,758,062	30,300,249	15,150,124	65,662,801	32,831,401
Wyoming	105,429,062	52,044,771	185,560,736	91,974,705	194,863,439	96,534,732	485,853,237	240,554,205
Total								

1/ Includes fees and interest.  
 2/ Under Section 402(g)(2), Congress must appropriate funds, and State reclamation plans must be approved by OSM before allocations can be made available as grants-in-aid. Appropriation of \$10 million for FY 1979 was made in expectation that some State plans would be approved in the fiscal year.  
 3/ No mining on non-Indian lands. See Hopi and Navajo.  
 4/ No monies allocated because State does not intend to submit a State reclamation plan.  
 5/ See also Crow.  
 6/ New Mexico was overstated by \$4,418,550.22 in prior years and the Navajo Tribe was understated by \$1,100,136.02. Adjustment was mainly due to a memorandum submitted by the Pittsburgh and Midway Coal Co. and to an error in reporting the Navajo Tribe share in both the New Mexico-Public and Navajo Tribe totals and, therefore, double counting. The New Mexico and Navajo adjustment is based on the best information available at the time of the allocations.  
 Final resolution of the stated amounts will be dependent upon additional documentation and the results of congressional consideration of Section 710 legislation.  
 7/ See also Navajo.

Table 5.---ABANDONED MINE RECLAMATION FUND, FY 1978-80.

State or Tribe	FY 1978		FY 1979		FY 1980		Total FY 1978-80	
	Revenue 1/	Allocation to State or Tribe 2/	Revenue 1/	Allocation to State or Tribe 2/	Revenue 1/	Allocation to State or Tribe 2/	Revenue 1/	Allocation to State or Tribe 2/
Alabama-----	\$2,643,499	\$1,321,750	\$5,761,849	\$2,880,924	\$6,551,240	\$3,275,620	\$14,956,587	\$7,478,294
Alaska-----	196,454	98,223	255,589	127,795	246,339	123,169	698,373	349,187
Arizona, 3/-----	75,860	37,930	127,827	63,914	77,490	38,745	281,177	140,588
Arkansas-----	2,483,731	1,241,866	4,464,179	2,232,090	5,039,074	2,519,537	11,986,985	5,993,492
Colorado-----								
Crow (Montana)-----	1,177,263	588,632	1,633,390	816,695	972,226	486,113	3,782,879	1,891,439
Georgia-----	10,061	(4/)	7,787	(4/)	4,969	22,817	22,817	(4/)
Hopi (Arizona)-----	243,706	121,853	391,677	195,838	588,726	294,363	1,224,108	612,054
Illinois-----	6,656,436	3,328,218	14,795,667	7,397,834	15,262,583	7,631,291	36,714,686	18,357,343
Indiana-----	4,798,096	2,399,048	9,426,032	4,713,016	10,126,632	5,063,316	24,350,760	12,175,380
Iowa-----	87,161	43,580	144,780	72,390	222,552	111,276	454,492	227,246
Kansas-----	363,866	181,933	304,517	152,259	274,612	137,306	942,995	471,497
Kentucky-----	20,385,020	10,192,510	31,177,345	15,588,673	34,643,492	17,321,746	86,205,857	43,102,928
Maryland-----	500,230	250,115	793,270	396,635	827,871	413,936	2,121,372	1,060,686
Missouri-----	1,051,749	525,874	2,377,721	1,188,861	1,987,969	993,984	5,417,439	2,708,719
Montana, 5/-----	5,374,402	2,687,201	10,827,453	5,413,727	7,386,924	3,693,462	23,588,779	11,794,390
Navajo (Arizona and New Mexico)-----	3,336,586	1,668,293	4,809,881	2,404,940	7,899,354	6/ 3,949,677	16,045,821	8,022,911
New Mexico 7/-----	1,084,869	542,434	5,787,763	2,893,882	1,956,308	978,154	4,916,324	2,458,162
North Dakota-----	915,061	457,530	1,260,368	630,184	1,637,859	818,934	3,813,297	1,906,649
Ohio-----	7,500,967	3,750,484	11,911,196	5,955,598	11,891,977	5,945,988	31,304,140	15,652,070
Oklahoma-----	1,266,433	633,216	1,805,948	902,974	1,742,666	871,333	4,815,047	2,407,523
Pennsylvania-----	12,323,125	6,161,562	22,949,563	11,474,782	22,604,029	11,302,014	57,876,716	28,936,358
Tennessee-----	1,636,494	818,247	2,048,049	1,024,025	2,423,628	1,211,814	6,108,172	3,054,086
Texas-----	1,157,651	578,826	2,295,434	1,147,717	2,641,749	1,320,875	6,094,834	3,047,417
Utah-----	766,151	384,076	1,571,424	785,712	1,840,971	920,485	4,180,546	2,090,273
Virginia-----	4,505,809	2,252,905	5,933,957	2,966,979	6,623,444	3,311,722	17,063,210	8,531,605
Washington-----	1,329,458	(4/)	1,603,547	(4/)	1,789,006	(4/)	4,722,011	(4/)
West Virginia-----	9,710,504	4,855,252	19,578,398	9,789,199	21,212,110	10,606,055	50,501,012	25,250,506
Wyoming-----	13,846,430	6,923,215	21,516,123	10,758,062	30,300,249	15,150,124	65,662,801	32,831,401
Total-----	\$105,429,062	\$52,044,771	\$185,560,736	\$96,534,732	\$194,863,439	\$96,534,732	\$485,853,237	\$240,554,205

1/ Includes fees and interest.  
 2/ Under Section 402(g)(2), Congress must appropriate funds, and State reclamation plans must be approved by OSM before allocations can be made available as grants-in-aid. Appropriation of \$10 million for FY 1979 was made in expectation that some State plans would be approved in the fiscal year.  
 3/ No mining on non-Indian lands. See Hopi and Navajo.  
 4/ No monies allocated because State does not intend to submit a State reclamation plan.  
 5/ See also Crow.  
 6/ New Mexico was overstated by \$4,418,550.22 in prior years and the Navajo Tribe was understated by \$1,100,136.02. Adjustment was mainly due to a memorandum submitted by the Pittsburgh and Midway Coal Co. and to an error in reporting the Navajo Tribe share in both the New Mexico-Public and Navajo Tribe totals and, therefore, double counting. The New Mexico and Navajo adjustment is based on the best information available at the time of the allocations. Final resolution of the stated amounts will be dependent upon additional documentation and the results of congressional consideration of Section 710 legislation.  
 7/ See also Navajo.

Table 6.--NUMBER OF ABANDONED MINE RECLAMATION PROJECTS AND FUNDS OBLIGATED, FY 1978-80.<sup>1/</sup>

State or Tribe	Emergency projects		High-priority projects		Total	
	No.	Amount obligated	No.	Amount obligated	No.	Amount obligated
Alabama-----	0	0	10	\$889,400	10	\$889,400
Alaska-----	0	0	0	0	0	0
Arizona. 2/	1	\$15,000	6	34,800	7	49,800
Arkansas-----	14	69,800	3	94,100	17	163,900
Colorado-----	0	0	0	0	0	0
Crow (Montana)---	0	0	0	0	0	0
Georgia-----	0	0	0	0	0	0
Hopi (Arizona)---	0	0	0	0	0	0
Illinois-----	9	145,900	25	1,773,900	34	1,919,800
Indiana-----	2	7,600	7	138,000	9	145,600
Iowa-----	2	81,400	2	39,900	4	121,300
Kansas-----	3	315,000	1	850,000	4	1,165,000
Kentucky-----	20	1,213,900	21	10,725,500	41	11,939,400
Maryland-----	0	0	2	1,164,700	2	1,164,700
Missouri-----	0	0	4	4,218,000	4	4,218,000
Montana. 3/	0	0	7	410,100	7	410,100
Navajo (Arizona and New Mexico) 4/	0	0	0	0	0	0
New Mexico 4/	0	0	13	285,900	13	285,900
North Dakota-----	1	300	4	871,500	5	871,800
Ohio-----	10	177,900	29	6,830,500	39	7,008,400
Oklahoma-----	0	0	4	140,000	4	140,000
Pennsylvania-----	34	3,558,900	51	16,078,700	85	19,637,600
Rhode Island-----	1	3,000	0	0	1	3,000
Tennessee-----	0	0	4	3,513,700	4	3,513,700
Texas-----	0	0	3	759,000	3	759,000
Utah-----	0	0	0	0	0	0
Virginia-----	2	65,000	15	4,246,900	17	4,311,900
Washington-----	0	0	5	35,300	5	35,300
West Virginia-----	21	506,300	12	6,529,700	33	7,036,000
Wyoming-----	4	43,900	4	468,900	8	512,800
Total-----	124	6,203,900	232	60,098,500	358	66,758,300

1/ Includes two projects (Young Adult Conservation Corps and Bureau of Mines) for \$456,000.

2/ See Hopi and Navajo.

3/ See also Crow.

4/ See also Navajo.

Table 7.--MINERAL INSTITUTES GRANTS, FY 1978-80.

State	Mineral Institute	Scholarship/fellowship/ <sup>1/</sup> Research/ <sup>2/</sup>				Type of grant				Total			
		FY 1978	FY 1979	FY 1980	FY 1979	FY 1978	FY 1979	FY 1980	FY 1979	FY 1978	FY 1979	FY 1980	FY 1978-80
Alabama	University of Alabama	---	---	---	---	---	---	---	---	---	---	---	---
Alaska	University of Alaska	\$160,000	\$160,000	\$160,000	\$192,102	\$200,063	\$110,000	\$110,000	\$110,000	\$462,102	\$310,063	\$72,165	\$72,165
Arizona	University of Arizona	160,000	---	---	59,637	53,541	110,000	110,000	82,500	169,637	136,041	575,678	575,678
California	University of California	160,000	---	---	77,597	302,492	110,000	110,000	82,500	187,597	384,992	842,589	842,589
Colorado	Colorado School of Mines	160,000	---	---	138,932	280,122	110,000	110,000	82,500	248,932	362,622	881,554	881,554
Georgia	Georgia Institute of Technology	---	---	\$160,000	---	67,798	---	---	110,000	---	---	337,798	337,798
Idaho	University of Idaho	160,000	---	---	68,922	49,656	110,000	110,000	82,500	178,922	132,156	581,078	581,078
Illinois	Southern Illinois University	160,000	---	---	273,181	608,707	110,000	110,000	82,500	383,181	691,207	1,344,388	1,344,388
Indiana	Purdue University	---	---	---	---	207,285	---	---	110,000	---	---	477,285	477,285
Iowa	Iowa State University	160,000	---	---	---	50,948	---	---	110,000	---	---	320,948	320,948
Kentucky	University of Kentucky	160,000	---	---	195,013	379,536	110,000	110,000	82,500	305,013	462,036	1,037,049	1,037,049
Louisiana	Louisiana State University	---	---	---	---	72,510	---	---	110,000	---	---	342,510	342,510
Massachusetts	Massachusetts Institute of Technology	160,000	---	---	52,700	227,183	110,000	110,000	82,500	162,700	309,683	742,383	742,383
Michigan	Michigan Technological University	---	---	---	---	270,123	---	---	110,000	---	---	380,123	380,123
Minnesota	University of Minnesota	160,000	---	---	100,573	105,488	110,000	110,000	82,500	210,573	187,988	668,561	668,561
Mississippi	University of Mississippi	160,000	---	---	54,857	104,789	110,000	110,000	82,500	164,857	187,289	622,146	622,146
Missouri	University of Missouri	160,000	---	---	57,064	169,734	110,000	110,000	82,500	167,064	252,234	689,298	689,298
Montana	Montana College of Mineral Science and Technology	160,000	---	---	253,698	244,046	110,000	110,000	82,500	363,698	326,546	960,244	960,244
Nevada	University of Nevada	---	---	---	---	48,515	---	---	110,000	---	---	318,515	318,515
New Mexico	New Mexico Institute of Mining and Technology	160,000	---	---	178,046	223,763	110,000	110,000	82,500	288,046	306,263	864,309	864,309
North Dakota	University of North Dakota	---	---	---	---	54,760	---	---	110,000	---	---	324,760	324,760
Ohio	Ohio State University	160,000	---	---	261,983	146,605	110,000	110,000	82,500	371,983	229,105	871,088	871,088
Oklahoma	University of Oklahoma	160,000	---	---	55,037	54,027	110,000	110,000	82,500	165,037	136,527	571,564	571,564
Pennsylvania	Pennsylvania State University	160,000	---	---	235,568	401,694	110,000	110,000	82,500	345,568	484,194	1,099,762	1,099,762
South Dakota	South Dakota School of Mines	---	---	---	---	71,970	---	---	110,000	---	---	341,970	341,970
Texas	University of Texas	160,000	---	---	49,761	44,077	110,000	110,000	82,500	159,761	126,577	556,338	556,338
Utah	University of Utah	160,000	---	---	208,613	250,386	110,000	110,000	82,500	318,613	333,086	921,699	921,699
Virginia	Virginia Polytechnic Institute and State University	---	---	---	---	197,003	---	---	110,000	---	---	467,003	467,003
Washington	University of Washington	---	---	---	---	29,184	---	---	110,000	---	---	299,184	299,184
West Virginia	West Virginia University	160,000	---	---	80,080	120,721	110,000	110,000	82,500	190,080	203,221	663,301	663,301
Wyoming	University of Wyoming	160,000	---	---	19,536	14,370	110,000	110,000	82,500	129,536	96,870	496,406	496,406
Total		3,200,000	320,000	1,440,000	2,737,726	5,300,010	2,200,000	2,420,000	2,860,000	5,400,000	5,477,726	9,600,010	20,477,736

<sup>1/</sup> Grant for a 3-year period when an institute is designated.  
<sup>2/</sup> No research grants in FY 1978.

Table 8.--APPROPRIATIONS, BY ACTIVITY, FY 1978-80, AND APPROPRIATIONS AVAILABLE, OBLIGATIONS, AND UNOBLIGATED BALANCE, FY 1980.  
(millions of dollars)

Activity	Appropriations			Appropriations available FY 1980 1/	Obligations FY 1980	Unobligated balance FY 1980
	FY 1978	FY 1979	FY 1980			
<b>REGULATION AND TECHNOLOGY</b>						
State Regulatory Program Grants			\$16.1			
Initial Regulatory Program	\$6.1	\$13.4	1.6			
Permanent Regulatory Program	5.0	4.0	4.0			
Permanent Program Operations	1.5	18.9	21.7	21.7	19.5	2.2
Subtotal	11.1	18.9	21.7			
Federal Regulatory Programs			14.4	14.4	13.1	1.3
State and Federal Programs	2.8	4.0	16.6	16.6	16.2	.4
Federal Inspection and Enforcement	5.5	13.4	7.0	7.0	6.6	.4
Technical Services	5.8	6.8	38.0	38.0	35.9	2.1
Subtotal	14.1	24.2	38.0			
Mineral Institutes			9.6	9.6	9.6	0
Grants	5.4	5.4	.4	.4	.4	0
Program Administration	.3	.4	10.0	10.0	10.0	0
Subtotal	5.7	5.8	15.0	15.0	15.0	0
Small Operator Assistance Payments			84.7	84.7	80.4	4.3
Total	30.9	53.9	84.7			
<b>ABANDONED MINE RECLAMATION FUND</b>						
State Reclamation Grants		10.0	25.0	32.2	4.1	28.1
Federal Reclamation Programs			9.1	18.2	12.5	5.7
Fund Management	4.8	8.7	39.4	59.3	61.1	(1.8)
Interior Reclamation Projects	15.8	21.9	1.2	1.8	1.1	.7
Technical Support	1.0	.8	10.1	16.5	13.4	3.1
Rural Lands Program	5.0	10.1	59.8	93.8	88.1	5.6
Subtotal	26.6	41.5	10.0	22.4	1.6	20.8
Small Operator Assistance Payments			10.0	148.4	93.8	54.5
Total	36.6	61.5	94.8	174.2	174.2	58.8
Grand total	67.5	115.4	179.5	233.0	233.0	58.8

1/ Includes available balances of preceding year.

Table 9.--OFFICE OF SURFACE MINING STAFFING, FY 1979-80.

Location	(1/)				FY 1979			FY 1980			Vacant positions
	Author-ized	On duty	Selected, not yet reported	Total							
Washington, D.C.--	247	161	271	249	265	237	0	237	0	237	28
Region I-----	231	102	229	198	225	186	0	186	0	186	39
Region II-----	213	85	211	199	210	181	0	181	0	181	29
Region III-----	116	69	117	111	116	107	1	108	1	108	8
Region IV-----	90	45	92	85	95	85	0	85	0	85	10
Region V-----	90	45	102	75	114	95	0	95	0	95	19
Total-----	987	507	1,022	917	1,025	891	1	892	1	892	133
PART-TIME PERMANENT											
Washington, D.C.-----						39	0	39	0	39	
Region I-----						15	0	15	0	15	
Region II-----						19	0	19	0	19	
Region III-----						10	1	11	1	11	
Region IV-----						7	0	7	0	7	
Region V-----						7	0	7	0	7	
Total-----						97	1	98	1	98	
Grand total-----						988	2	990	2	990	

1/ As of January 4, 1979.

Table 10.--NUMBER AND TYPE OF COAL MINE OPERATIONS, AND PRODUCTION, FY 1980.<sup>1/</sup>

S, surface mines; U, underground mines<sup>7</sup>

State or Tribe	Number and type of mines		Total production (tons) <sup>1/</sup>
	S	U	
Alabama-----	834	30	25,074,772
Alaska-----	1	0	703,824
Arizona. <sup>2/</sup>	11	0	237,813
Arkansas-----	34	32	18,271,990
Colorado-----			3,398,715
Crow (Montana)-----	1	0	21,896
Georgia-----	11	0	1,371,467
Hopi (Arizona)-----	1	0	62,582,266
Illinois-----	144	40	29,793,775
Indiana-----	329	4	
			709,195
Iowa-----	8	1	875,754
Kansas-----	11	0	142,479,018
Kentucky-----	3,249	1,229	3,013,593
Maryland-----	134	6	5,639,242
Missouri-----	15	0	
			28,717,317
Montana <sup>3/</sup>	11	1	
Navajo:			10,089,356
Arizona-----	1	0	10,237,158
New Mexico-----	4	0	7,011,818
New Mexico <sup>4/</sup>	9	3	
			16,739,179
North Dakota-----	14	0	41,715,835
Ohio-----	982	35	5,385,206
Oklahoma-----	55	1	91,596,282
Pennsylvania-----	3,340	98	9,503,010
Tennessee-----	603	129	
			28,261,972
Texas-----	12	0	11,830,623
Utah-----	0	26	34,573,910
Virginia-----	284	647	5,111,446
Washington-----	3	0	111,651,699
West Virginia-----	1,112	1,333	86,591,434
Wyoming-----	30	4	
			793,189,565
<b>Total-----</b>	<b>11,243</b>	<b>3,619</b>	

- <sup>1/</sup> Based on fee-compliance records.  
<sup>2/</sup> See Hopi and Navajo.  
<sup>3/</sup> See also Crow.  
<sup>4/</sup> See also Navajo.