



ANNUAL REPORT 1979

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

Public Law 95-87

UNITED STATES DEPARTMENT OF THE INTERIOR, WASHINGTON, D.C. 20240

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United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

FEB 27 1980

To the President of the United States:

To the Congress of the United States:

I am pleased to transmit herewith the 1979 Annual Report required by the Surface Mining Control and Reclamation Act of 1977, P. L. 95-87.

While the major accomplishment of 1979 for the Office of Surface Mining was the publication of its permanent regulatory program in March, public participation and the courts continued to help shape the direction of OSM's programs. Priority effort was directed toward assisting the coal-producing States to assume primary regulatory authority for surface mining operations. The Office vigorously supported an extension for State program submittal, and strengthened its commitment to public involvement in its regulatory process.

CECIL D. ANDRUS
SECRETARY

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EXECUTIVE SUMMARY

When the Surface Mining Control and Reclamation Act was signed into law by President Carter on Aug. 3, 1977, it set in motion a program to establish the first nationwide environmental controls on the surface effects of coal mining. To steer these standards into place, the Act created a new government agency within the Department of the Interior, the Office of Surface Mining Reclamation and Enforcement—OSM. This report covers OSM's activities and programs during its second full year of operations.

OSM: AN OFFICE AND ITS MISSIONS

The law sets minimum national standards for regulating the surface effects of coal mining: both strip and underground. It also directs OSM to assist States to develop and implement their own regulatory programs, and promote reclamation of previously mined areas. Regulatory programs will be carried out by the States, under programs approved by the Secretary of the Interior. A Federal program will be implemented in a State only when it has failed to submit an acceptable program of its own. OSM also has responsibility for regulating surface coal mining on Indian and Federal lands.

By the end of 1979, OSM had filled all but 80 permanent positions. Seventy-five percent of OSM's personnel are assigned to either one of five regional, 14 district, or 28 field offices in locations keyed to the coalfields.

To fund OSM activities, Congress appropriated \$115.4 million for FY 1979. The FY 1980 budget is \$179.6 million.

As 1979 drew to a close, several legal actions which challenged the constitutionality of the Act were pending—including two raised by States—Indiana and Virginia. This report summarizes the progress of these cases so far.

TRANSLATING THE LAW: THE REGULATORY PROGRAM

Since May 3, 1978, all surface coal mining operations must have State permits and must comply with initial program regulations. These regulations—published Dec. 13, 1977—underwent several revisions in 1979 as the result of public comment and petitioning. These include: standards for spoil and waste disposal, prime farmlands, enforcement procedures, and approximate original contour (AOC).

Since States needed to amend their programs to enforce the initial standards, OSM gave 21 States a total of \$14,895,507 to cover the additional costs of their efforts.

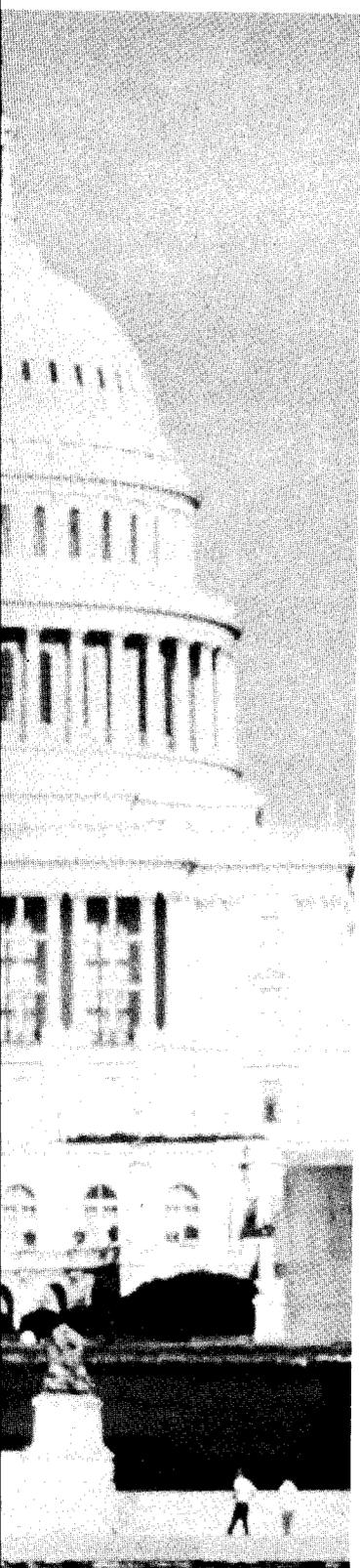
On Mar. 13, 1979, OSM issued its final permanent regulatory program regulations. The regulations had been written in final form after a comment period of more than 100 days, 25 days of public hearings in six cities, and thousands of pages of comment and testimony were analyzed. The regulations set standards for development and implementation of State regulatory programs, Federal programs in lieu of State programs, and Federal lands programs. Requirements on mine operators take effect through State, Federal, and Federal lands programs after they are implemented.

The permanent program regulations, while not actually in force, had a number of revisions proposed to their contents in 1979. OSM announced plans to revise its bonding program. A more simplified hydrologic permitting system as well as possible changes in design standards for sediment control are two areas where some change in 1980 might be anticipated.

On June 19, 1979, Secretary of the Interior Cecil D. Andrus had asked Congress to allow an additional seven months for submission and approval of programs. On July 23, 1979, responding to a suit by the State of Illinois and the Commonwealth of Virginia, Federal District Court Judge Thomas A. Flannery extended until Mar. 3, 1980, the Aug. 3, 1979 deadline for submission of State plans for regulation of surface mining.

On Sept. 11, 1979, the Senate passed S. 1403 which would extend the deadline for State program submissions and for Secretarial approval as well by 12 months. The bill also would eliminate the necessity that State programs meet the requirements of the Federal regulations. By the end of 1979, no further action on this bill had been taken.





In 1979, four States submitted their program proposals—Texas, Mississippi, Montana, and Wyoming. Two others—Georgia and Washington—have indicated that they do not want their own permanent regulatory program.

In FY 1979, 14 States received a total of \$3.15 million to help develop their own permanent programs.

The Small Operator Assistance Program (SOAP)—for qualified small operators producing less than 100,000 but more than 250 tons of coal annually—went into effect in July 1979. Since then, eight States have declared their intent to have OSM run SOAP during the initial program on their behalf; fourteen others will administer their program with OSM grants. Nine States have received SOAP grants for a total of \$12,593,564.

Surface coal mining and reclamation operations on Indian lands were regulated during 1979 with limited performance standards and more comprehensive inspection and enforcement procedures.

Work was nearing completion in late 1979 on an update of Indian coal regulations and an agreement between OSM, the Geological Survey, and the Bureau of Indian Affairs to define their agencies' changing roles.

The Act required the Secretary to develop a Federal lands program for surface coal mining and reclamation activities on Federal lands. Regulations for the permanent program were published Mar. 13, 1979. Under the new regulations, new mining operations or additional permit areas on present mining operations would need to comply with permanent program requirements. At the end of the year, the Federal lands program was being operated under the initial regulatory program's performance standards.

In June 1979, Montana, Utah and Wyoming and the Department of the Interior signed modified cooperative agreements. The State of North Dakota also entered into a cooperative agreement with Interior late in 1979. These agreements offer a mechanism for State regulatory agencies to exercise their enforcement powers on Federal lands.

Prompted in part by a petition from Montana, subsequently joined by other Western States, on Sept. 28, 1979, OSM proposed changes to the schedule for compliance with permanent performance standards by existing operations on Federal lands. After an analysis of all comments received, the Secretary decided to postpone operator compliance with the permanent program until a State program had been approved or a Federal program for a State had been implemented. The amended schedule applies to all operations and to all States.

INSPECTION AND ENFORCEMENT

In FY 1979 OSM conducted 13,932 inspections at 6,770 separate mines, resulting in 3,055 notices of violations covering some 6,859 separate violations, and 602 cessation orders, which contained 804 separate violations.

In 1979 the most frequent serious violation was failure to meet effluent standards, followed by failure to pass all surface drainage through sedimentation ponds; improper handling of topsoil; haul roads; improper identification signs and markers; and placing spoil on the downslope.

Any citizen can request inspection of the surface or area of a mine where a violation of the Act, regulations, or permit conditions may exist, or if there is thought to be an imminent danger or harm. Nationwide, in FY 1979, OSM received 554 citizen complaints. Ninety-eight percent of them resulted in inspections.

From Feb. 14, 1979 to Aug. 10, 1979, OSM inspectors were enjoined from inspecting in Virginia in connection with the lawsuit filed against the Department by the Virginia Surface Mining and Reclamation Association. The injunction was lifted by the Court of Appeals for the 4th Circuit, August 10. By the end of 1979, Virginia's inspection teams had averaged 50 inspections per week in the State's southwestern coalfields.

REPAIRING THE LAND: THE ABANDONED MINE LANDS PROGRAM

The Abandoned Mine Land Reclamation Fund finances State, Federal and Indian reclamation programs, with top priority given to projects which, in their present condition, are active hazards to public health and safety. The fund is supported by a fee charged on all coal production. Regulations covering administration of these funds were published Oct. 25, 1978.

By the end of FY 1979 the fund had collected more than \$290 million. Fifty percent of this was allocated to those States and Indian lands where the fees were collected. The balance of the fund is distributed as follows: \$10 million annually for a Small Operator Assistance Program (SOAP); up to 20 percent to the Soil Conservation Service for a Rural Lands Reclamation Program (RAMP); and the remainder to be used by OSM for a program of reclamation projects which will be carried out through contracts or additional grants to States.

Even before a State's regulatory program has been approved, a State or Indian tribe can get an advance of funds from the AML Fund. In FY 1979, 14 States and one Indian tribe received these advance funds through individual cooperative agreements.

An analysis of how States and Indian tribes can develop abandoned coal mine reclamation plans to comply with provisions of the Act was widely distributed in FY 1979. OSM also proposed reclamation guidelines to help States and Indian Tribes develop their own AML plans on Nov. 6, 1979.

A major task in 1979 involved developing a national inventory of abandoned mine lands. A memorandum of understanding between Interior and the Department of Energy's Oak Ridge Laboratory to establish this program was signed in the Spring. By the end of 1979, one tribe and 25 States had agreed to prepare bibliographies of existing abandoned mine land information.

LOOKING TOWARD THE FUTURE: EDUCATION, RESEARCH AND INFORMATION TECHNOLOGY

Research and education continued to play an important role in supporting the regulatory and reclamation programs provided by the Act.

By Oct. 1, 1979, 462 scholarships, graduate fellowships and postdoctoral fellowships—totalling \$1,185,000—had been awarded by 22 State Mining and Minerals Resources and Research Institutes. More than 50 percent of these awards were in undergraduate level courses to encourage recipients to continue in their chosen mineral resources field.

The research grants called for in the Act were awarded by OSM for the first time in FY 1979. Fifty-one separate **research** grants were awarded, amounting to \$2.73 million.

The Advisory Committee on Mining and Minerals Resources and Research continued to provide guidance to the Secretary and to OSM—including assistance in selecting the peer panel reviewers to evaluate proposals for the initial research grants.

In 1979, the list of applied research projects—in support of the regulatory program—grew longer. Additions included hydrologic monitoring, aerial photo surveillance, groundwater movement and chemistry, vegetative cover for disturbed areas.

Work continued on OSM's feasibility study for a cataloging data center. Requirements of both headquarters and five regional offices will be studied in determining overall information needs.

Regulations to establish a nationwide training, examination and certification program for blasters were proposed June 29, 1979.

An in-depth study of surface coal mining conditions in Alaska was scheduled for completion in 1980.

OSM: AN OFFICE AND ITS MISSIONS

On Aug. 3, 1977, President Jimmy Carter signed the Surface Mining Control and Reclamation Act into law in White House Rose Garden ceremonies. That day marked the culmination of a 10-year struggle to place uniform Federal controls over the surface mining of coal.

Surface mining today accounts for more than 50 percent of the Nation's coal production, but that extraction can be costly. For when he surface mines, man literally must move mountains. In the process, he changes the land. Before environmental controls, strip mining and the surface effects of underground mining often rendered the mined land useless. Streams and rivers—clogged and polluted—spelled death for fish and wildlife populations. Smoke from burning piles of coal mine wastes polluted the air for miles. And unsafe coal mine dams posed a constant treat to inhabitants of mountain communities.

The infliction of such widespread environmental damage is becoming history as programs initiated by this landmark legislation begin to show results.

The Act called for a program that would protect society and the environment from the adverse surface effects of coal mining operations, and at the same time would strike a balance with the increased demand to make America "energy sufficient" through development of its immense coal resources.

To accomplish this, the program established minimum standards for regulating the surface effects of coal mining, assisting States to develop and implement their own regulatory programs, and promoting reclamation of previously mined areas. Surface mining will be regulated by the States, under programs approved by the Secretary of the Interior. A Federal program would be implemented in a State only after that State has failed to submit an acceptable program of its own, or failed to administer or enforce a program approved by the Secretary.

Statutory Authority

To execute this program, the Act created an Office of Surface Mining Reclamation and Enforcement—shortened to OSM—within the U.S.

Department of the Interior. As authorized by the law, 30 U.S.C. 1201 et seq., OSM was established by the Secretary of the Interior on Sept. 7, 1977.

Walter N. Heine, formerly Associate Deputy Secretary for Mines and Land Protection in the Pennsylvania Department of Environmental Resources, was sworn in as Director on Dec. 7, 1977. Paul L. Reeves—head of the task force that developed the fledgling office—became his deputy in January 1979.

Organization

Charged with administering the new law, OSM set up four major program areas and an administrative support staff. They are:

- *State and Federal Programs*, which develops criteria for State regulatory programs; provides grants to States to develop State programs and to operate their own regulatory programs on both an initial and permanent basis; reviews State programs; monitors approved State programs; implements Federal programs in those States that do not regulate surface coal mining; coordi-



nates regulation on Federal and Indian lands; establishes criteria for designating lands unsuitable for coal mining; coordinates processing of petitions for designating lands unsuitable for mining; manages a program to aid small mine operators; conducts a study of how Indian tribes might assume regulatory authority for surface coal mining on Indian lands.

- *Inspection and Enforcement*, which conducts inspections on surface coal mining operations to insure compliance with the Act and Federal regulations; takes enforcement action in cases of violations; assesses penalties on violations; assists and monitors State inspection programs; protects coal mine employees from discrimination because of actions taken under this law.

- *Abandoned Mine Lands (AML)*, which manages the Abandoned Mine Reclamation Fund, a unique feature of the Act, which utilizes fees levied on current coal mining operations to correct environmental damage resulting from past mining practices. It also administers Federal AML reclamation projects; provides guidelines to State and Indian tribes for their AML reclamation programs; provides reclamation funds to State and Indian tribes with approved regulatory and reclamation programs.

- *Technical Services and Research*, which stipulates technical requirements for permits, reclamation plans and performance standards; funds the State Mining and Mineral Resources and Research Institutes (MMRRI) program; develops and conducts the inspector training program; provides technical back-up and support to the other three program areas.

THE OSM NETWORK

The Office of Surface Mining is headquartered in Washington, D.C., and maintains a nationwide organization of five regional and 14 district offices located in or near the coal-

producing areas. Each of the program areas is headed by an assistant director. The directorates are divided into divisions and branches in a structure that is duplicated at the regional level. Both assistant directors and regional directors report to the OSM director. A complete chart appears on page 19 of this report.

The regional offices are in Charleston, W. Va.; Knoxville, Tenn.; Indianapolis, Ind.; Kansas City, Mo.; and Denver, Colo. Additionally, 14 district and 28 field offices were set up in the heart of the coalfields to furnish the inspection, enforcement and technical support vital to the success of the program.

BUDGET

The Department of the Interior and Related Agencies Appropriations Act for FY 1979 provided \$115.4 million for FY 1979. Of this, \$49.7 million was for financial assistance to the States, mineral institutes, and small mine operators. The remaining \$65.7 million was for direct Federal programs. The FY 1980 budget of \$179.6 million included \$82.7 million in financial assistance activities and \$96.9 million for Federal functions. Additional budgetary information is presented in Table I-1 and I-2, on pages 50 - 51.

PERSONNEL

Initial staffing of OSM was substantially complete by the end of 1979, with 942 out of 1,022 authorized positions filled. Seventy-five percent of these personnel were assigned to the field.

Recruiting persons with the highly specialized backgrounds required in OSM's many technical positions, including women and minorities, required an extensive outreach effort through public and private environmental protection agencies, universities, industry organizations, and professional societies.

As full staffing became a reality,

the Division of Personnel turned its efforts toward programs such as training, Upward Mobility and cooperative education, review of employee appeals procedures, refinement of the merit promotion plan, and institution of executive development (Senior Executive Service) and incentive awards programs. Regions I and III began testing the feasibility of compressed or alternative work schedules.

EQUAL EMPLOYMENT OPPORTUNITY

At OSM, the equal employment opportunity (EEO) program primarily emphasized recruitment activities to attract minority and women applicants. In 1979, there was an intense involvement by EEO staffers at conventions and conferences expressly for this purpose. A special recruiting conference was held in Puerto Rico to identify Hispanic science and engineering students for potential referral to OSM's cooperative education program. Another emphasis was on increasing contact with historically black colleges and universities to publicize this cooperative education program. An EEO officer was placed in each of the five regional offices, and specialist positions were added at headquarters to assist program activities. Special efforts were made to identify and inform minority contractors, particularly those who qualify for contracts under the Small Operator Assistance Program (SOAP).

CONFLICT OF INTEREST

The Act was the first to expressly forbid Federal and State employees engaged in its administration and enforcement from holding "direct" or "indirect" financial interests in coal mining. Regulations establishing methods for monitoring and enforcing these provisions were issued on Oct. 20, 1977.

During 1979 all OSM employees submitted statements of employment and financial interests. From each Department of the Interior bureau and other Federal agencies performing functions under the Act, OSM also received a list of positions involved in those duties. All submitted financial interest statements were reviewed thoroughly for compliance with the conflict-of-interest provisions.

In 1979 OSM considered a joint petition from five environmental organizations which contended that granting exemptions to members of boards or commissions who represent multiple interests is contrary to Congressional intent as stated in the 1977 Act. OSM then proposed that State advisory board members with such conflicts of interest continue to participate in board activities—as long as they made up less than half the board members and did not act on issues from which they could personally profit. On September 25, OSM held a hearing on the proposed change. At the end of 1979 no final ruling had been made.

JUDICIAL INTERPRETATION

As 1979 drew to a close, several actions challenging the constitutionality of the Act were pending.

On Mar. 26, 1979, in *Virginia Surface Mining and Reclamation Association v. Andrus*, the U.S. District Court for the Western District of Virginia issued a preliminary injunction against the Secretary prohibiting the enforcement of Sections 502 through 522 of the Act. This decision was appealed to the U.S. Court of Appeals for the 4th Circuit, which reversed the lower court and lifted the injunction on Aug. 10, 1979. In April 1979, the District Court held a hearing on a motion for a permanent injunction in this case, after which legal briefs were filed by the parties. The District Court had not ruled on the permanent injunction motion by the end of the year.

In *Indiana Coal Association v. United States and State of Indiana v. Andrus*, filed in the U.S. District Court for the Southern District of Indiana, industry plaintiffs challenged the constitutionality of the Act, in particular the prime farmlands provisions, while the State of Indiana maintained the Act violates the Constitution by intruding upon internal State affairs. On Apr. 18, 1979, the Court held a hearing on the plaintiffs' motion for preliminary injunction and the government's motion to dismiss. The parties submitted briefs thereafter. No decision had been rendered by the court by the end of 1979.

In *Star Coal Company v. Andrus*, filed Apr. 18, 1979, in the U.S. District Court for the Southern District of Iowa, Star requested the Court to declare the Act unconstitutional and issue preliminary and permanent injunctions against its implementation. The primary bases for the challenge to the Act were (1) that because Star Coal's mining operations within the State of Iowa do not substantially affect interstate commerce, Congress may not regulate them under the commerce clause of the Constitution, and (2) the prime farmlands' provisions unconstitutionally take coal underlying farmlands without compensation.

Union Carbide Company v. Andrus was filed May 4, 1979, in the U.S. District Court for the Southern District of West Virginia. Cannelton Industries was allowed to intervene in this suit by order of the Court on July 16, 1979. These consolidated cases are suits for declaratory judgment and preliminary and permanent injunction to restrain the Secretary during the initial program from, among other things: conducting Federal inspections and enforcement unless there is compliance with Section 521 (a)(1) of the Act regarding notice to the States; and issuing notices of violation and cessation orders under the provisions of Section 521(a)(3) where the operators are not "permittees" under the

Act. On July 17, 1979, the Court dismissed all of the plaintiffs' contentions, but deferred a decision on the Section 521(a)(3) claim in order to consider arguments that that section is unconstitutional or is being unconstitutionally applied. The Department filed its answer Dec. 5, 1979.

ADMINISTRATIVE REVIEW

The Secretary of the Interior must provide an administrative review for many of OSM's implementing and enforcement actions. In addition, several sections of the Act also require the opportunity for trial-type hearings under the Administrative Procedures Act.

OFFICE OF HEARINGS AND APPEALS

The Secretary exercises this administrative review process through the Office of Hearings and Appeals (OHA). OHA consists of a Hearings Division—staffed by administrative law judges—and several appeals boards established to review appeals stemming from initial decisions of administrative law judges or from decisions from Department of the Interior program bureaus.

OHA's hearings division is located in Arlington, Va., where the chief administrative law judge and one administrative law judge charged with OSM matters have their offices. To expeditiously handle cases, the Hearings Division created four additional field offices and stationed four administrative law judges in Knoxville, Tenn., Louisville, Ky., Charleston, W. Va., and Pittsburgh, Pa. Administrative law judges in OHA field offices in Sacramento, Calif., and Salt Lake City, Utah, conduct most of the hearings in the Western States.

The Board of Surface Mining and Reclamation Appeals, a three-member body responsible for reviewing decisions under the Act, was established Oct. 20, 1977. The Board also is headquartered in Arlington, Va.

Appeals to the Board under the initial regulatory program can involve:

- Petitions for review of proposed assessments of civil penalties issued by OSM;
- Applications for review of notices of violations and cessation orders or modifications, vacations, or terminations of such notices;
- Proceedings for suspension or revocation of permit issued;
- Applications for review of alleged discriminatory acts filed;
- Applications for temporary relief;
- Petitions for award of costs and expenses;
- Certification of an interlocutory ruling or interlocutory appeal.

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

CASELOAD IN THE FIRST THREE QUARTERS OF 1979

In the first three quarters of 1979, the Hearings Division received 361 applications for review of notices of violation or cessation orders, 119 petitions for review of proposed assessments of civil penalties, and one show-cause order concerning the suspension or revocation of a permit. The Hearings Division held 136 hearings. It disposed of 62 review cases by decision and 124 by dismissal. Thirty-nine penalty cases were disposed of by decision and 31 were dismissed. Twenty-six cases were appealed to the Board.

In the first three quarters of 1979, the Board docketed 26 cases and decided 23 cases, 15 by opinion and 8 by various types of orders. Of the 26 cases docketed, 20 concerned applications for review of notices of violation or cessation orders, four

involved petitions for discretionary review of civil penalties, one was a petition for costs and expenses, and one was an interlocutory appeal.

The following types of cases were decided by opinion: 12 applications for review of notices or orders; two civil penalty cases—one case involving the Board's decision on an interlocutory ruling certified to the Board by an administrative judge in a civil penalty proceeding; and one award of costs and expenses.

The Board also disposed of eight other cases by orders. A temporary relief case (carried over from 1978) was dismissed. A civil penalty case and two review cases were dismissed after requests by OSM for voluntary dismissal. A review case was dismissed after OSM withdrew the appeal and a request for an interlocutory appeal was denied. The Board denied a petition for discretionary review of a civil penalty and dismissed one review case because the appellant failed to pursue the appeal.

In four of the cases docketed with the Board, intervention was sought by the Council of the Southern Mountains, Inc.; the Environmental Policy Institute; the National Wildlife Federation; the Appalachian Coalition; the Tug Valley Recovery Center, Inc.; Save Our Mountains; Virginia Citizens for Better Reclamation; and Save Our Cumberland Mountains. Intervention was granted in all cases. In two cases, the Board granted oral argument requested by a party, and in one case the Board ordered oral argument on its own motion.

TRANSLATING THE LAW: THE REGULATORY PROCESS

Surface coal mining was conducted for decades before it was regulated by State governments. Coal was extracted to fuel a burgeoning economy, and the results—denuded slopes, burning spoil piles, barren agricultural lands, and sterile streams—were passed on to other generations because reclamation of mined lands was not required.



Before the Surface Mining Control and Reclamation Act became law in 1977, 25 coal-producing States regulated surface coal mining to some extent. State regulations included issuing State mining permits and often a bond on lands to be mined, to assure these lands would be reclaimed. Most States had on-site mine inspections. But both the effectiveness and regulatory requirements of coal mining programs varied from State to State. Clearly there was a need for a nationwide program to protect society and the environment from the adverse surface effects of coal mining.

The question was, how to do it? In the Surface Mining Control and Reclamation Act of 1977, Congress came up with a practical method. The law sets nationwide performance standards for surface and underground coal mine operations. These performance standards come in two phases: the initial and the permanent regulatory programs. States, if they

want to continue to regulate surface coal mining, needed to pass laws allowing them to enforce the performance standards of the initial regulatory program. Then, under a timetable given by Congress, States could pass laws and prepare a State program to submit to the Secretary of the Interior that, when approved, would allow them to enforce perfor-

OSM must implement a Federal regulatory program in that State. If a State's permanent regulatory program is approved, the Federal agency makes periodic checks to see how well the State's program is working.

THE INITIAL REGULATORY PROGRAMS

Though many States regulated surface coal mining activities before the Surface Mining Control and Reclamation Act of 1977, no State's program met the full range of

Prior to strong Federal standards, a rocky, gutted hillside—devastated by the common practice of casting spoil on the downslope—was often the aftermath of mining operations.

mance standards of the permanent regulatory program.

Congress created OSM to serve as both helping hand and overseer. The help comes in the form of monetary grants-in-aid to States, to foot the extra cost of enforcing the initial regulatory program, and also OSM-provided technical and administrative assistance to the States. Additional monetary help is available to finance the State's development of its own program for the permanent regulatory program. When a State has achieved primary regulatory authority, the Federal Government assumes an overseer role to insure a State's program is as rigorous as Federal law and regulations. If a State program is not approved, then

requirements in the new Federal law. Most coal-producing States have upgraded their existing regulatory programs since the law was passed.

Since May 3, 1978, all surface coal mining operations must have State mining permits and comply with the initial program regulations. These regulations set 12 performance standards covering topsoil, blasting, spoil and waste disposal, backfilling and grading, revegetation, post-mining land use planning, signs, dams, and hydrologic systems—and special areas of steep-slope mining, mining on prime farmlands, and mountain-top removal.

Since States needed to upgrade their programs to be able to enforce the initial regulatory program perfor-



August 1978 U.S. District Court decision. On June 11, 1979, OSM proposed changes to these special performance standards that included:

- limiting the definition of prime farmlands to land used in agricultural production for five of the previous 10 years—the “historical-use” clause;
- exempting surface coal mining and reclamation operations covered



Now through State and Federal cooperation, this same site can be reclaimed and reseeded to support vegetation again.

under the “grandfather” clause from both prime farmlands permit application and prime farmlands performance standards in the initial regulations.

Hearings were held on these proposed changes June 27, 1979, in Washington, D.C., Indianapolis, Ind., and Kansas City, Mo.

Final regulations had not been published at the end of 1979.

ENFORCEMENT PROCEDURE

On Aug. 20, 1979, OSM proposed changes to enforcement regulations that would clarify the way in which OSM notices and orders are served, explain the effect of refusing these documents, and spell out when and

mance standards, OSM reimbursed 21 States for their extra expenses during the initial program. In FY 1978 these States received \$6,096,928; this total rose to \$14,895,507 in FY 1979, as shown in Table III-1 on page 63. The grants allow State regulatory agencies to revise mining permits to incorporate the initial performance standards, respond to citizen complaints, purchase equipment, and increase the size of their staffs.

OSM has made numerous changes in the initial program regulations to make them more flexible and more workable. Changes were proposed, for example, in regulations covering spoil and waste disposal, prime farmlands, inspection and enforcement procedures, and returning land to approximate original contour (AOC).

SPOIL AND WASTE DISPOSAL

Revised initial regulations issued May 23, 1979, gave coal mine operators more flexibility in designing criteria for excess spoil disposal and for sedimentation ponds. The new rules allowed three construction alternatives for spoil disposal as long as the proposed method was approved by the regulatory authority. The degree of engineering design required would be determined by the

slope characteristics at the disposal site. The rules also provided an alternative method for constructing head-of-hollow or valley fills. Sedimentation ponds can either be used as one large individual pool or in a series of smaller ponds, as long as they are constructed before mining begins and are as close to the mining site as possible. All operators must include proof in their proposed mining plans that their intended sedimentation control plans will be adequate to meet environmental requirements.

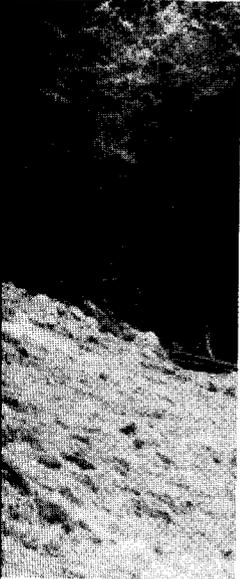
These regulations were part of a package of initial program rules remanded to the Secretary of the Interior by a U.S. District Court ruling on Aug. 24, 1978. As part of the reconsideration process, OSM again proposed rules on both areas and held a public hearing on them in Washington, D.C. The spoil disposal regulations went into effect in 30 days. However, the effective date for the sedimentation pond rules was postponed until Federal Judge Thomas A. Flannery had the opportunity to review them. At the time this report was prepared, this review had not been completed.

PRIME FARMLANDS

Parts of the prime farmlands standards also were enjoined in the

where informal public hearings would be held under the agency's initial regulatory program. OSM officials believed that adoption of these proposals would clear up any confusion about coal operators' responsibilities and rights when enforcement actions are taken.

A hearing on the proposals took place in Washington, D.C., Oct. 9, 1979. Final rules had not been published by the end of 1979.



APPROXIMATE ORIGINAL CONTOUR

On Oct. 24, 1979, OSM proposed regulations that would provide variances from requirements in the initial program regulations to return mined land in steep slope areas to its approximate original contour (AOC). This proposal was based on OSM's conclusion—drawn from comments from the coal industry, State and other Federal agencies, and public interest groups—that the initial rules did, in fact, impose tougher AOC standards than the permanent program rules, and as such, violated the Act's intent to provide a phasing-in of environmen-

tal standards. These proposed changes would allow for a variance from AOC to improve watershed control of lands within the permit area and on adjacent lands, and allow the land to be used for an industrial, commercial, residential or public use, including recreation facilities. Those granted variances, however, would have to meet certain requirements. OSM held a hearing in Washington, D.C., on the AOC proposals in November. Final regulations had not been published by the end of 1979.

JUDICIAL REVIEW: THE INITIAL PROGRAM

Suits challenging the initial program regulations were consolidated in *In Re: Surface Mining Regulation Litigation* heard by Judge Thomas A. Flannery in the U.S. District Court for the District of Columbia. In an Aug. 24, 1978 decision, Judge Flannery rejected most of the industry's challenges to the Act and the initial program regulations. Certain issues that were the subject of this ruling were appealed to the U.S. Court of Appeals for the District of Columbia Circuit. Legal briefs were filed, and oral arguments were heard in the summer of 1979. Issues on appeal include alleged inadequate basis and purpose statement for initial regulations, lack of a general variance provision, head-of-hollow fill construction standards, effluent limitations, prime farmlands exemptions, blasting standards and enforcement of regulations on Indian lands. At the time this report was prepared, there had been no decision by the Court of Appeals on these issues.

THE PERMANENT REGULATORY PROGRAM

On Mar. 13, 1979, OSM issued its permanent regulatory program. The regulations had been written in final

form after a comment period of more than 100 days, 25 days of public hearings in six cities, and analysis of thousands of pages of comment and testimony. The regulations set standards for development and implementation of State regulatory programs, Federal programs in lieu of State programs, and Federal lands programs. Requirements on mine operators take effect through State, Federal, and Federal lands programs after they are implemented.

The permanent regulations' performance standards—in addition to the standards of the initial program—cover conservation of resources, surface area stabilization, restoration of topsoil, prime farmlands, permanent water impoundments, augering operations, waste disposal, fire hazards, access roads, revegetation, spoil disposal, fish and wildlife protection, slide or erosion barriers, off-site area protection, lack of delay in reclamation work, and surface effects of underground mining.

PERMANENT REGULATIONS IN TRANSITION

Since most of the permanent regulations are not yet in force, fewer changes to their content were proposed in 1979. However, less than two months after their publication, OSM received an industry petition challenging certain provisions of its new bonding program. A more simplified hydrologic permitting system as well as possible changes in design standards for sediment control—triggered by recent findings of well-known engineering firms—seem imminent for 1980.

BONDING

Bonding regulations in the permanent program were first challenged in a petition jointly submitted by the Mining and Reclamation Council of America (MARC), the Green Mountain Company, and the Traveler's Indemnity Company. The petition contended that the regula-

tions must be amended to comply with the requirements of both the Act and with the intent of Congress. Specifically, the petition said that amendments were necessary to enable surety companies to continue providing reclamation bonds to coal operators so that they can obtain mining permits; that the amendments could ease the problems small operators have in obtaining bonds; and that rapid clarification was needed to prevent these small operators from going out of business because they cannot obtain bonding. OSM considered the petition of sufficient merit to hold a hearing on June 5, 1979, in Washington, D.C. On Sept. 6, 1979, after carefully studying the petition, OSM conceded that considering selected areas suggested by the MARC petition could improve the bonding aspects of the permanent program. Under consideration for amendment are: determination of bond amount; period of liability; adjustment of amount; form of the performance bond; criteria and schedule for release of performance bond; bonding requirements for underground mining and coal processing facilities. Revised bonding regulations had not been published by the end of 1979.

ONE-STOP HYDROLOGIC PERMITTING

On Sept. 25, 1979, OSM announced a proposed agreement with EPA that could lead to a one-stop hydrologic permit process for many of the Nation's coal mines. This "memorandum of understanding" calls for a single permit system in most situations for controlling pollutant discharges into the Nation's rivers and streams. By combining the resources of both agencies, this system could cut through much of the paperwork now involved in the dual permitting system.

Under the new system:

- EPA will issue special NPDES—National Pollution Discharge Elimination System—permits in States where EPA has NPDES

authority. This will be a special umbrella-type permit for coal mining operations.

- An operator then will apply to the mining regulatory authority for a permit in compliance with the Act, including all NPDES information, which is nearly identical to that required for permits issued under the Act.



- When the mining permit is issued following these steps, it will simultaneously bring the operator into compliance under both systems.

Once this agreement is signed by the Secretary of the Interior and the EPA Administrator, both agencies will begin rulemaking to implement this new system.

BLASTER CERTIFICATION

On June 29, 1979, OSM proposed new regulations that would eliminate the requirement that blasting crew members be certified. Blasters-in-charge, however, would have to pass a national test in order to conduct blasting in coal surface mining and reclamation operations. The regulations also would place a limit on the number of persons in a blasting crew,

and would require direct on-the-job training be provided by the coal operators. OSM held hearings on these revisions on July 31, 1979 in Washington, D.C., Charleston, W. Va., Knoxville, Tenn., Indianapolis, Ind., Kansas City, Mo., and Denver, Colo. Final regulations had not been issued by the end of 1979.

SEDIMENT CONTROL STANDARDS

On Dec. 31, 1979, OSM suspended portions of its sediment control standards in both initial and permanent regulations. The action stemmed from the findings of two OSM/EPA-commissioned studies that contended effluent limitations imposed on suspended solids cannot be met during substantial rainfalls if the operator uses a sediment pond designed according to OSM criteria. These studies prompted an industry-initiated petition requesting that OSM repeal and reconsider certain sections of its permanent program. OSM believed the petition raised valid questions, and, on Oct. 30, 1979, convened a hearing in Washington, D.C., for further discussion.

Comments received on the petition substantiated study findings and led to the suspension. Affected regulations were: rainfall conditions that result in exemption from EPA effluent limits; and design standards related to capacity and time which determine minimum pond size. Concurrent with the suspension, OSM initiated rulemaking procedures to amend the standards. Meanwhile, OSM will rely on EPA rainfall exemption elements. Surface coal mine operators will be required to pass all drainage through one or more ponds and meet effluent limits unless they prove entitlement to exemption. If the regulations are not amended before the deadline for State program submission, OSM will give States a later opportunity to amend their permanent program proposals.

STATE PROGRAM PROCEDURES

In October, OSM asked for public comment on a petition from Wyoming Governor Ed Herschler to allow OSM regional directors to approve certain State program amendments within 60 days. The proposal would apply to changes that would result in less stringent requirements. Following the public comment period, OSM determined in December that the principal thrust of Governor Herschler's petition should be accepted.

REDUCED PRINTING COSTS

An OSM decision not to publish thousands of pages of State surface mining statutes and regulations in the *Federal Register* will save approximately \$1.5 million in printing costs. The change amended a requirement of the permanent program regulations that OSM publish complete texts of each State's surface mining regulations and statutes in the *Federal Register*. Instead, OSM will make a single copy available, without charge, to any person requesting a State's surface mining statutes and regulations. Copies are also available for public review at OSM and State offices.

SUSPENDED RULES

On Nov. 27, 1979, OSM temporarily suspended a limited section of its own permanent regulations. The suspension was based on a determination—from internal review within OSM and current litigation over its permanent regulations—that the rules may not properly reflect the intent of the Act.

This suspension provided States with the opportunity to adopt regulatory provisions based on the language of the Act rather than on the rules which will be modified. States will be able to adjust their programs, if necessary, after the new rules are published.

The following rules were included in the suspension: operation on less than two acres; existing structure exemptions; definitions of public roads and valid existing rights; properties eligible for listing on the National Register of Historic Places; definition of irreparable harm to the environment; selected bonding requirements; and treatment of acid or toxic materials.

JUDICIAL REVIEW: THE PERMANENT PROGRAM

The Mar. 13, 1979, permanent program regulations were challenged in numerous suits by States, coal mining operating companies and environmental organizations. The suits were consolidated in *In Re: Permanent Surface Mining Regulation Litigation* in the U.S. District Court for the District of Columbia and assigned to Thomas A. Flannery, as was the initial program regulations litigation. To deal with this complex litigation, the Court adopted a three-step briefing schedule, the first involving requests for preliminary relief, followed by two rounds of briefs and oral arguments on challenges to the merits of the regulations.

On July 25, 1979, in response to the request of the State of Illinois and the

Commonwealth of Virginia, Judge Flannery extended from Aug. 3, 1979, until Mar. 3, 1980, the statutory deadline for submission of State plans for regulation of surface mining.

On August 22 Judge Flannery issued a decision upholding OSM's permanent program against challenges by several parties seeking preliminary injunctions. The Court said that OSM officials could continue meeting informally with State officials prior to submission of their regulatory programs. Such meetings were extremely useful in helping States develop their own programs. The ruling also concluded that the regulations provide adequately for public participation in the State program development process; that OSM's regulations are within the intent of the Act making it necessary for industry to comply with surface mining permit application regulations; and that contacts between the Council of Economic Advisors (CEA) and OSM following the close of the comment period on the final permanent program regulations were not illegal. However, CEA was to submit, for the administrative record, any documents relating to OSM's regulations not previously submitted, covering the period Sept. 18, 1978, and Mar. 13, 1979.

In accordance with the Court's schedule, a series of briefs were filed from September through December 1979 covering more than 100 issues on the merits of the permanent regulations. Oral arguments on the issues presented in the first round of briefs were heard by the Court on November 16.

STATES AND THE PERMANENT REGULATORY PROGRAM

The major question about the permanent regulatory program posed by States during 1979 was, "What's the deadline for submitting State program proposals to the Office of Surface Mining?"

It was all a matter of timing . . . Congress had given deadlines in the bill that became law in August 1977, but OSM was not funded until March 1978. This delay affected its capability to meet the law's requirements, and resulted in a delay in publishing permanent program regulations.

Under deadlines in the law, States were to have submitted their State program proposals to OSM by Feb. 3, 1979, or by Aug. 3, 1979, if new legislation was needed. On February 3, OSM had published no regulations for the permanent program. On Jan. 31, 1979, it had released the final programmatic Environmental Statement with a "preferred alternative" that essentially were regulations for the permanent program. Because of this delay and because all States would need legislative action to comply with the new requirements, Secretary of the Interior Cecil D. Andrus extended the February 3 deadline to Aug. 3, 1979, the maximum allowed under the Act.

EXTENDING THE DEADLINE

Because some States faced great difficulties in assembling their proposed program submissions by Aug. 3, 1979, Secretary Andrus asked Congress on June 19 to allow an additional seven months for submission and approval of State programs. His request would have moved the Aug. 3, 1979, deadline for State program submission to Mar. 3, 1980—and the June 3, 1980, deadline for Secretarial approval to Jan. 3, 1981. The extension would recover the seven months lost by late appropriations and the subsequent lag in completing permanent regulations.

Congress did not complete action on the Secretary's proposal, but Federal District Court Judge Thomas A. Flannery decided on July 23, 1979 to move the deadline for State program submission to Mar. 3, 1980, ruling on a suit brought by the State of Illinois and the Commonwealth of Virginia. But Judge Flannery did not advance the June 3, 1980, deadline for Secretarial approval. Then on Dec. 5, 1979, the Interior Solicitor issued an opinion that OSM could administratively move the June 3, 1980 deadline for approval back to Jan. 3, 1981 in order to retain the ten-month period for review of State programs originally provided in the Act.

To further complicate the issue, on September 11, the Senate passed S. 1403 which would extend the deadline for State program submissions and for Secretarial approval as well by 12 months. The bill also would eliminate OSM's regulations as the standard for State program submissions, change the effective date of the Federal lands program to the date for State program approval, and give States prime jurisdiction over surface coal mining and reclamation operations during the initial program and before submission or disapproval of State program proposals.

S. 1403 and H.R. 4728 providing this extension were introduced by request by Senator Henry Jackson and Representative Morris Udall, but the legislation was not enacted during 1979.

STATE PROGRAM SUBMISSIONS



A State program is the State's blueprint for action to enforce the performance standards of the permanent regulatory program. A program includes a State's laws and regulations. It also must provide an explanation of how the State plans to handle requirements ranging from mining permits to public participation. The State must demonstrate that it is capable of carrying out the requirements of Federal law and regulations at the State level.

On July 20, 1979, Texas became the first State in the Nation to officially submit a proposed State regulatory program. The proposal was submitted by the Texas State regulatory agency, the Texas Railroad Commission. The plan was received by the Office of Surface Mining's Region IV Office in Kansas City.

To get an idea of the administrative process a State program proposal goes through, let's look at the process used on the Texas proposal.

Immediately upon receipt, Region IV prepared a *Federal Register* notice to say the program had been received and was available for public review and comment. A public review meeting was held in Austin, Tex., on September 5 to discuss the

completeness of the program. Forty-four persons attended that meeting, with representatives from government, industry, and conservation groups. Meanwhile, OSM Region IV employees were reviewing every part of the 884-page program and were making recommendations to a task force that would eventually report to the regional director. In September, a letter was sent to Texas advising that the program was incomplete due to the absence of a section-by-section comparison of State and Federal laws and regulations. Texas was advised further that although other elements were considered to be complete, it did not mean they were substantively adequate. The State had until November 15 to make modifications to its proposed program. On November 13, an amended submission was received, after which another *Federal Register* notice was prepared and public hearing was held in Austin on December 19 and 20, 1979. Testimony was taken on the substance of the program. The hearing transcript accompanies the recommendation from OSM's Region IV to the OSM Director in Washington, D.C. His recommendation, in turn, goes through the Department of the Interior to Secre-

tary Cecil D. Andrus, who must approve or disapprove the Texas program within six months of submission. If the Secretary does not approve the plan, Texas would have 60 days to revise and resubmit its plan. Then, 60 days later, the Secretary would have to make his final decision. Approval by the Secretary gives the State primary jurisdiction over regulation of surface coal mining and reclamation operations within the State. The second or final disapproval would mean that these activities would be regulated by OSM instead of the State.

Mississippi submitted a plan on Aug. 2, 1979, followed by Montana on August 3, and Wyoming on August 15. Other coal-producing States, with the exception of Georgia and Washington, were developing State program proposals for submission to OSM at the end of 1979.

PROGRAM DEVELOPMENT AID

OSM assists States in the development of their permanent regulatory program with grants-in-aid. In FY 1978, \$3 million in OSM grants went to eight States; in FY 1979, 14 States shared \$3.15 million, as shown in Table III-1.

These grants reimburse State regulatory agencies for costs of developing or revising laws, regulations, and procedures. Texas, for example, received a grant of \$185,634, which covered 80 percent of the State's expenses in developing its program. Had Texas chosen to finance this with State funds, it would have received 80 percent of its costs during the first year of permanent program operations. Now it will receive 60 percent that year and 50 percent each year that follows. Several States have chosen to finance the development of their permanent program entirely with State funds so that they can get 80 percent reimbursement of their first year costs of operating the program.

BUILT-IN FLEXIBILITY

Considerable variations in State program proposals may occur due to differences in terrain, climate, biological, and other physical conditions. The regulations permit a substantial amount of flexibility so that States can adapt their programs to such differences. There are well over one hundred such provisions in the regulations. In addition, because it was not possible to cover every situation, OSM included a special provision in the regulations which allows States to propose other approaches. This provision is called the "State Window."

The State Window concept allows States to propose alternatives to both environmental performance standards and procedural and administrative provisions. Such alternatives, however, must be no less stringent than the corresponding Federal regulations and must achieve the requirements of the Act.

A potential State Window variation would be the requirement that all exposed coal seams and all acid-forming and non-combustible materials be covered with four feet of non-toxic and non-combustible materials. Less than four feet was rejected because it is generally inadequate to prevent acid mine drainage or prevent upward migration of salts. However, a State could propose a less-than-four-foot requirement if in a particular geographic area there was a particularly effective cover material that would meet both of these purposes. The State then would have to supply evidence supporting use of this different standard.

In addition to the flexibility given by the State Window, OSM's permanent regulations include provisions which provide built-in flexibility by expressly permitting more than one method to satisfy a particular requirement. In such cases, the States need not justify the choice of one approach over another. There are numerous such opportunities included in the regulations themselves for State selection of techniques or

procedures to be applicable in the State.

Other regulations allow a State to decide how to proceed on a site-specific basis for individual permits, with the variations suggested and justified to the State by the permit applicant. Once again, States may use this permit-by-permit variation without justifying it in a State program submission.

In addition to flexibility written into its regulations, OSM remains open to suggestions that its regulations be changed. The regulations specifically provide for any person to petition the Director to initiate rulemaking. Such petitions have resulted in proposed rulemaking actions on bonding requirements, the effective date of the Federal lands program, conflict-of-interest requirements, and procedures for amending approved State programs.

SMALL OPERATOR ASSISTANCE PROGRAM (SOAP)

Technical assistance for small coal operators arrived in the summer of 1979 with the implementation of the Small Operator Assistance Program (SOAP). Through SOAP, qualified mine operators—producing less than 100,000 tons, but more than 250 tons of coal per year—can get assistance in meeting certain environmental permit requirements of the permanent regulatory program. These permit requirements are the determination of probable hydrologic consequences of coal mining and reclamation operations, and a statement of the results of test borings or core samplings as required by the law. The “determination” is essentially an analysis of the cause-effect relationships of the proposed mining and reclamation operation on the quantity and quality of surface and ground water. The “statement” analyzes overburden, coal and affected aquifers and clay zones below the coal to provide information on the chemical and physical makeup of materials affected by mining, and especially acid and toxic producing materials.

Although SOAP technically takes effect during the permanent regulatory program, it was initiated early so that data collection and analysis could be conducted for an operator when he or she submitted a mine permit. Launching this program was a major initiative for OSM in 1979 because long-lead times are required to collect certain of this essential environmental data, particularly from small watersheds in the East where data is scarce. This assistance will be provided by qualified laboratories within a reasonable distance of the mining operations.

Regulations for SOAP first appeared in the *Federal Register*, Dec. 13, 1977, as part of the initial program package. These regulations place responsibility for the program with the State. States with approved permanent programs will administer SOAP with OSM and available State funds. Thus, OSM will run the program only where a State fails to present an approvable regulatory program as required by the Act.

Prior to permanent program approval, however, either OSM or a State can provide assistance. The regulations require States to send OSM a letter of intent regarding their administration of SOAP six months before submittal of the State's program to allow plenty of time to begin data collection. Funds were available for grants to States to pay the costs of assisting operators in 1979. Federal funds also are available to cover State administrative and staff costs for the program in order to get a head start on State administration, laboratory qualification, and contracting.

With the small operator's welfare in mind, the Congress built provisions into the Act, through the Abandoned Mine Reclamation Fund, to allow 10 percent—or no more than \$10 million—to be earmarked for SOAP annually. On hand at the end of the year were \$20 million accumulated from 1978 and 1979 AML appropriations and another \$5 million from 1979 general fund appropriations. To give further impetus to the program, an additional \$25 million was appropriated for 1980.

SOAP ACCOMPLISHMENTS

- Laboratory qualifications and small operator application forms and information packages were developed, approved by GAO, and distributed to the regions. These packages were sent to States for their optional use.
- Approximately 100 laboratories were found qualified to perform the required studies. Requests for proposals from them were being evaluated at the end of the year for potential contract awards for SOAP services.
- The States of Georgia, Indiana, Missouri, New Mexico, Pennsylvania, Utah, Washington and Wyoming declared their intent to have OSM run the SOAP on their behalf until the State is prepared to assume SOAP responsibilities or received approval of its permanent program, whichever came first. Program initiation was announced in those States, and operators were requested to submit application for assistance.
- Fourteen other States had or would (upon approval) receive grants to administer the program and issue laboratory contracts to assist small operators. Nine States already receiving SOAP grants were: Alabama, Illinois, Kansas, Kentucky, Maryland, Ohio, Oklahoma, Virginia, and West Virginia, for a total of \$12,592,564. Operators in those States were encouraged to apply to State agencies for assistance.

- Cooperative agreements were made with the U.S. Geological Survey and the Environmental Protection Agency for utilizing their water resources computer data systems.
- OSM field offices were sent copies of the first of four planned volumes cataloging the U.S. Geological Survey's computerized catalog of information on water data. The catalog tells the mine operator if the hydrologic data he or she needs is, in fact, available, and, if so, which agency to contact.
- SOAP personnel were placed in all five OSM regional offices as well as in the Washington, D.C., headquarters.
- Seminars and workshops for operators began—in some cases jointly sponsored by OSM and local community colleges. Future sessions by local colleges were encouraged to advise operators not only of the availability of SOAP, but also to further educate them on other aspects of OSM and the Act.
- A guidance document on the “determination of probable hydrologic consequences and the statement of test borings or corings” was in preparation at the end of 1979.
- The Water Resources Center of the University of Delaware was preparing a handbook for small operators on reclamation techniques that preserve and enhance water quality and quantity. This handbook—intended for layman's use—will cover the eastern part of the United States.
- A work group on “data needs for coal hydrology” was formed in cooperation with the U.S. Geological Survey and other Federal agencies to develop approaches which describe data acquisition, analysis, interpretation, and coordinating procedures.
- A SOAP contracting test case was initiated in November 1979 to test data collection guidelines and contract stipulations.

THE FEDERAL LANDS PROGRAM

While State regulatory agencies have jurisdiction over State and private lands within their boundaries, the Secretary of the Interior retains jurisdiction over Federally-owned lands and minerals. The Federal government owns significant coal resources in the West. Of the 240 billion tons of identified coal reserves there, 80 percent is either Federally-owned or dependent for its development upon issuance of Federal coal leases. Substantial Federal-owned coal reserves are located in Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming. Ten percent of national coal production, or about 50 million tons of coal, was mined from the 788,000 acres of Federal lands under coal leases in 1978. Figures for 1979 are expected to be similar.

The Act requires the Secretary of the Interior to develop a regulatory program for surface coal mining and reclamation activities on Federal lands. Regulations for the permanent program on Federal lands were published Mar. 13, 1979. Thirty days later, on April 21, the regulations took effect: new mining operations or additional permit area on present mining operations would need to comply with permanent regulatory program requirements. Existing mines had until Oct. 12, 1979, to comply.

Prompted in part by a petition from Montana, subsequently joined by other Western States, on Sept. 28, 1979, OSM proposed changes to the schedule for compliance with permanent program performance standards by existing operations on Federal lands. After a public hearing on October 18 and an analysis of all comments received, the Department decided to postpone operator compliance with the permanent program until after a State program has been approved or a Federal program for a State has been implemented. The amended schedule, which was announced in the Dec. 31, 1979 *Federal Register*, applies to all operations and to all States.

By the end of 1979, the Federal lands program was being operated under the initial regulatory program's performance standards.

COOPERATIVE AGREEMENTS

OSM administers the Federal Lands program, but is authorized to delegate much of the responsibility to States through cooperative agreements. Through such agreements, State regulatory agencies exercise their enforcement powers on Federal lands to meet requirements of the Act.

In March 1979, OSM offered for public comment modified cooperative agreements between the Department of the Interior and Montana, Utah, and Wyoming. On June 11, the modified agreements were published in the *Federal Register* to allow the three States enforcement powers on Federal lands under the initial regulatory program's performance standards. The State of North Dakota also entered into a cooperative agreement with Interior late in 1979.

Colorado and New Mexico enacted legislation to allow State participation in such cooperative agreements, and negotiations for cooperative agreements were underway in late 1979. All of the cooperative agreements under the initial regulatory program remain in effect until a State's program under the permanent regulatory program is approved or disapproved by the Secretary of the Interior. New cooperative agreements will be needed under the permanent regulatory program, and Wyoming had requested, but had not yet received, such a cooperative agreement at the end of 1979.

OSM expects that several Eastern and Midwestern States with Federal coal lands also will request cooperative agreements under the permanent program.

While many responsibilities can be handled by State regulatory agencies under cooperative agreements, others may not be delegated to States under these agreements. For example, a State might become involved in the review of a mine plan or a permit application on Federal lands, but the responsibility for approving or disapproving the plan would remain with Interior.

MINE PLAN REVIEW

Two months after approval of a State program or institution of a Federal program, all coal operators on Federal lands are to have filed a complete application for a mining permit under the permanent regulatory program. Eight months after approval of a State program or imposition of a Federal program, all coal operators on Federal lands are to have an approved permit under the permanent regulatory programs with a few exceptions where OSM has not acted on the application.

A heavy workload in mine plan review is anticipated by OSM since it is responsible for coordinating the Department's action on mining and reclamation plans for surface and underground mines on Federal lands.

At the beginning of 1979, OSM had 29 mine plans on hand for review. Thirty-one more were submitted during the calendar year. Ten of the 60 mine plans available for review were approved by the Secretary. The remaining 50 mine plans were in the OSM review process.

Most of the current mine plan review effort was concentrated in OSM's regional office in Denver, Colo. This region has authority for the Western States where most of the Federal and Indian lands are located. To expedite the review in the West, the Denver regional office engaged four private contractors to aid the technical staff. In addition, the U.S. Geological Survey (USGS) assisted the regional office until it had completed staffing technical positions. USGS helped review mine plans for completeness, and also provided environmental analyses of mine plans. Its services shortened the review process and made it more efficient. OSM also was developing a computer system to be used by all of its regions to facilitate rapid retrieval of the status of any active or proposed mine under OSM's jurisdiction. Computer programs entered into this system will generate a variety of reports, such as complete status, selected information on one or many mines, or information on a single coal region or State. This computer system, like the contracting services used by the Denver office, will expedite reporting on the mine plan process.

UNSUITABILITY PETITIONS

The Mar. 13, 1979, regulations allowed for filing petitions to designate Federal lands unsuitable for all or certain types of surface coal mining. This provision allows the State or Federal government to respond to conflicts that arise between coal mining and other land uses. April 12, 1979 was the first day on which OSM could accept such petitions. Only one petition was received in 1979—filed in Utah in April covering approximately 10,000 acres in the southern part of the State.

The petition was returned as incomplete, and was resubmitted to OSM on Nov. 28, 1979.

IMPOSED FEDERAL PROGRAMS

As mentioned earlier in this report, OSM is required to regulate surface coal mining and reclamation activities in a State under the performance standards of the permanent regulatory program under three conditions:

- *The State's proposal for the permanent regulatory program was disapproved after re-submission to the Secretary of the Interior, or*
- *The State does not apply for approval of its own permanent regulatory program, or*
- *OSM subsequently withdraws its approval of the State's program.*

OSM encouraged and supported the primacy of States in the regulation of surface coal mining and reclamation activities within their borders. Nevertheless, in 1979 two States, Georgia and Washington, indicated that they did not plan to submit regulatory programs by Mar. 3, 1980.

By the end of 1979 work had begun on a contingency Federal program for a State. This program was being designed so it could be adjusted to any State, using those portions of an existing or proposed State regulatory program which were acceptable.

REGULATORY PROGRAMS ON INDIAN LANDS

Surface coal mining and reclamation operations on Indian lands were regulated during 1979 under a combination of authorities of the Secretary with respect to his trust responsibilities. The Act requires compliance with the initial performance standards, excluding blasting, and the initial program inspection and enforcement procedures on Indian lands.

While Congress had recognized the desirability of having Indian tribes regulate their own lands in a manner similar to State regulatory programs, they deferred passage of tribal regulatory authority pending a study of the complex jurisdictional and other regulatory issues by the Secretary.

OSM contracted with the Council of Energy Resources Tribes (CERT) to study how tribes might best regulate themselves. The study report, received in November 1979, included several options for tribal self-regulation. The second phase is a study of jurisdictional questions. It was prepared by the Office of the Solicitor (Department of the Interior) in cooperation with OSM, and submitted to the tribes for their review and comments. Based on these two studies, OSM and the Solicitor's Office were examining alternative approaches to tribal regulation and preparing draft legislation which will be submitted as part of the Secretary's report to the Congress on Indian regulatory program.

OSM also is preparing regulations to apply the permanent program requirements to Indian lands. These regulations, originally due by Feb. 3, 1980, will be delayed approximately seven months, the amount of delay in other OSM permanent regulatory programs.

In 1979 OSM assumed administration of the more stringent environmental protection standards formerly handled by the U.S. Geological Survey (USGS). Work was nearly complete in late 1979 on an update of Indian coal regulations and an agreement between OSM, USGS, and the Bureau of Indian Affairs to define their agencies' changing roles.

OSM inspectors became a more frequent—and a more visible—presence in the Nation's coalfields as the Federal surface mining inspection force neared the end of its first full year of operations. In 1979, 204 men and women inspectors patrolled the coalfields of 27 States to insure that both surface and underground coal mines adhered to the environmental standards of the Act. An additional 17 inspector positions were vacant at the end of 1979.

TRAINING

Each inspector had undergone a rigorous two-week basic training course before he or she actually began inspection duties. This course included an introduction to the legal and technical aspects of their jobs. Additionally, regional offices made special advance training available on such topics as blasting, hydrology, revegetation, water quality, and evidence gathering. A continuous training cycle will be a vital part of each inspector's work experience. In FY 1979 approximately 200 OSM inspectors attended the basic training course at classes held during January, February, July, and September. Each succeeding class emphasized more and more "hands-on" field work with the September class actually conducting a "mock inspection." An advanced inspector training class was held in February.

AUTHORIZED REPRESENTATIVES

To write notices of violation (NOVs) and cessation orders (COs), an inspector first must become an "authorized representative of the Secretary of the Interior." Since some inspectors joined OSM with relatively little experience, they initially were accompanied by their veteran counterparts. Those with little prior experience received several months, and in some cases, up to a year of field training before they were authorized to inspect and to take enforcement actions.

THE INSPECTION

The Act requires each mine to be inspected twice a year, after two or more violations at the site are noted by State inspectors, and when a complaint is filed which creates reason to believe violations are occurring at the site. These inspections are conducted without prior notice to the mine operator.

Initially, OSM and State inspectors worked in close coordination, and many early inspections were conducted jointly. During that period, OSM enforcement was aimed also at only the more serious violations, due primarily to a very limited inspection force which needed to concentrate all its efforts on those violations threatening the health and safety of the public and maximum harm to the environment. By March 1979, however, the inspection cadre now numbered some 182 strong. OSM officially drew its transition period to a close since the inspection force was sufficient to concentrate on increasing the quantity and quality of inspections to the level mandated by law.

In 1979 inspection and enforcement activities on Federal lands were based on the initial program requirements and the approved State-Federal cooperative agreements. In States with cooperative agreements, coordination of inspection and enforcement work with the State regulatory authorities was given considerable attention to clearly define both State and Federal roles.

THE NUMBERS

In FY 1979 OSM conducted 13,932 inspections at 6,770 separate mines. These inspections resulted in 3,055 notices of violations covering some 6,859 separate violations, and 602 cessation orders, which contained 804 separate violations. Each of these violations was considered under the Act and OSM's regulations for the possible assessment of a civil penalty. The Act mandates a civil penalty for a cessation order and allows a civil penalty for a notice of violation. Each of the violations in a cessation order and two-thirds of the violations in notices of violation led to a proposed civil penalty. A total of \$7,759,000 in proposed assessments were issued and 1,538 informal conferences were requested in FY 1979. Conferences normally were held within 60 days of the request.

MOST SERIOUS VIOLATIONS

Most of the cessation orders covered only part of the mining operation at the site, and most of the violations on which they were based could be remedied within one week. The most frequent violations involved:

- FAILURE TO MEET EFFLUENT STANDARDS
- FAILURE TO PASS ALL SURFACE DRAINAGE THROUGH SEDIMENTATION PONDS
- IMPROPER HANDLING OF TOPSOIL
- HAUL ROADS
- IMPROPER IDENTIFICATION SIGNS AND MARKERS
- PLACING SPOIL ON THE DOWNSLOPE

CITIZEN INSPECTIONS

Anyone may request an inspection of a mine where a violation of the Act, regulations, or permit conditions exists, or if there is thought to be an imminent danger or harm. If the information supplied creates a reasonable belief that a violation or an imminent hazard exists, OSM will conduct the investigation and provide a written report to the complainant within 10 days. A person whose complaints lead to Federal inspections has the right to accompany OSM inspectors. In FY 1979 OSM received 554 citizen complaints nationwide, 98 percent of which actually resulted in inspections. Most of the complaints involved failure of the mine operator to conduct a pre-blast survey.

ENJOINED IN VIRGINIA

From Feb. 14, 1979 to Aug. 10, 1979, OSM inspectors were enjoined from inspecting in Virginia. The injunction was lifted by the Court of Appeals for the 4th Circuit, August 10. At the end of 1979, OSM inspection teams were averaging 50 inspections per week in the State's southwestern coalfields.

LEGAL ACTION

Council of Southern Mountains, Inc., filed suit June 12, 1979, in the U.S. District Court for the District of Columbia, to compel the Secretary to implement the mandatory enforcement provisions of the Act. The Department answered and a pre-trial conference was held Nov. 16, 1979. Settlement discussions were held on certain issues, and plaintiffs filed a motion for summary judgment on the remaining issues on Dec. 10, 1979.

AERIAL MONITORING

During 1979 OSM field offices made extensive use of aerial observation of coal mining areas. Within a single quarter, one regional office made 454 such aerial inspection flights. These flights were used primarily to spot gross violations of the Act, but they were also a valuable tool in helping acquaint a new inspector with the minesite before he or she actually conducted the inspection on the ground. The flights were useful also in preplanning inspections since the mines with more extensive "violations" were more easily spotted from the air, and in supervisory monitoring of OSM inspectors' success. Helicopters played an important role in revealing the nature of conditions in the coalfields, both for inspectors and for OSM officials from Washington. They provided inspectors with an overall picture that could seldom be seen on the actual mining site. Since each inspection must involve an actual visit to the mine, overflights alone were never counted as inspections.

SHOW-CAUSE ORDER

On May 25, 1979, OSM issued its first "show-cause" order to a Missouri mining firm for a pattern of violations, requiring the company to show cause to the Office of Hearings and Appeals why its permit to mine should not be suspended. In October an agreement between OSM, the company, and the State regulatory agency resulted in an order from an administrative law judge that contained the permit and tight schedule of reclamation work to be followed by the company.

REPAIRING THE LAND: THE ABANDONED MINE LANDS PROGRAM

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

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

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

THE AML FUND

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

First fees were due Jan. 30, 1978, for the fourth quarter of 1977, and by the end of FY 1979, the fund had collected more than \$290 million. Fifty percent of this was allocated to States and Indian lands based on the



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

total fees collected in each State and applicable Indian lands. In FY 1979, \$61.4 million was appropriated, and \$33 million obligated. Unappropriated and unobligated fund balances remain available until appropriated or obligated.

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

HOW THE AML FUND IS USED

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

- Reclaim and restore land and water resources adversely affected by past coal and other mining;

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

FEDERAL, STATE AND INDIAN RECLAMATION PROGRAMS

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

FEDERAL PROJECTS

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

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



RURAL ABANDONED MINE PROGRAM (RAMP)

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

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

RAMP OPERATIONS

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

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

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

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

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

STATE AND INDIAN PROGRAMS

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

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

Some of the uses planned for these monies include:

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

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

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

Development of State and tribal AML programs was running smoothly at the end of 1979. One



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

State—Oklahoma—submitted its reclamation plan in November 1979.

ANNUAL WORK PLAN

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

INDIAN STUDY

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

MODEL RECLAMATION PROGRAM

An analysis of how States and Indian tribes can develop abandoned

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

RECLAMATION GUIDELINES

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

DRAFT ENVIRONMENTAL STATEMENT

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



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

ABANDONED MINE LAND INVENTORY

The Act requires OSM to identify and reclaim abandoned coal mines

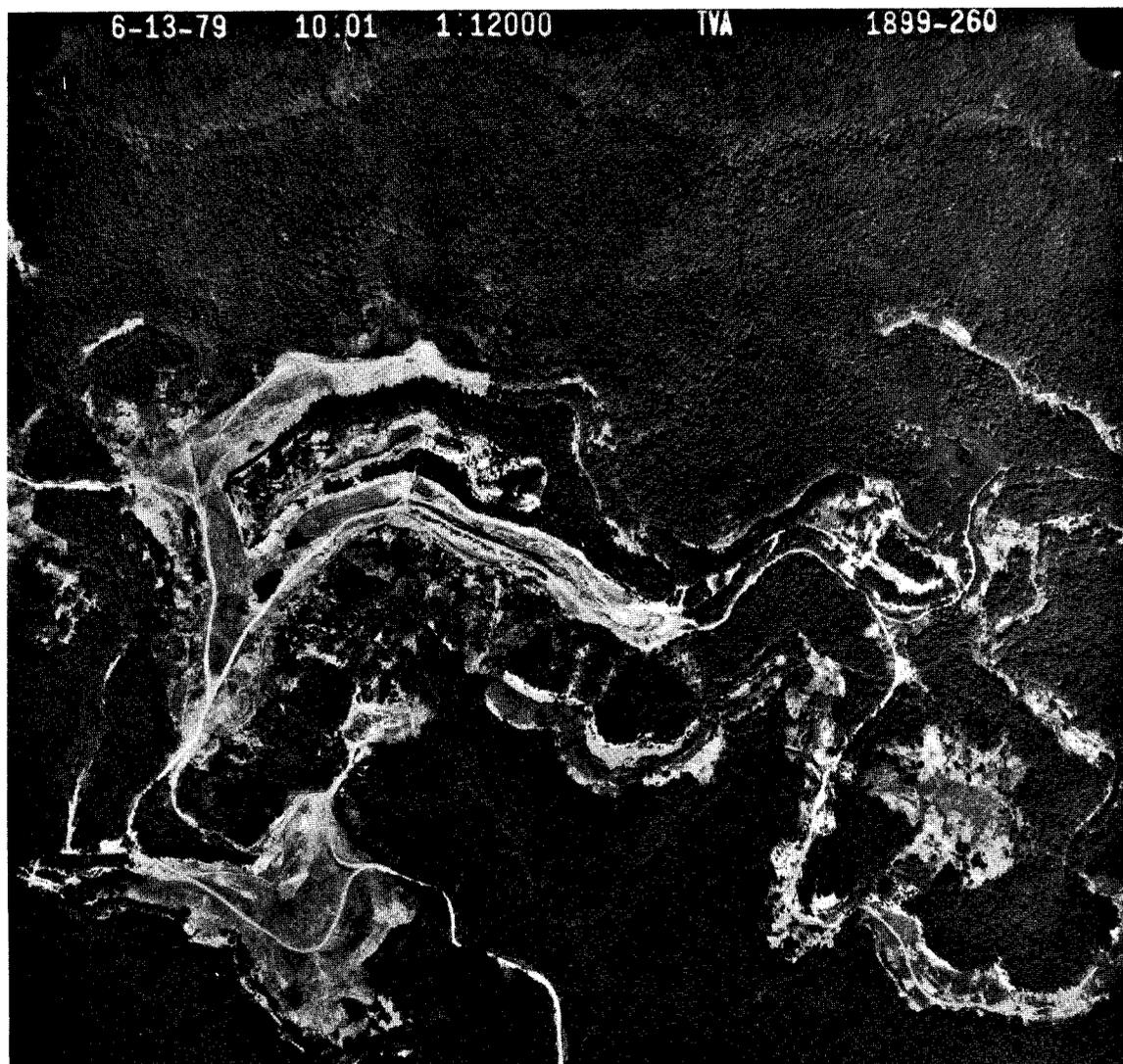
and lands or waters affected by past coal mining processes. To carry out this responsibility, OSM began developing a national inventory of abandoned mine lands and associated problems. This inventory is intended primarily to assist OSM headquarters and regional offices, States, and tribes in determining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

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

be combined with data acquired from Federal agencies to complete an interim inventory by the end of the year.

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

LOOKING TOWARD THE FUTURE: EDUCATION, RESEARCH AND INFORMATION TECHNOLOGY



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

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

MINERAL INSTITUTES

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

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

ALLOTMENT GRANTS

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

SCHOLARSHIP AND FELLOWSHIPS

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

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

RESEARCH GRANTS

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

ADVISORY COMMITTEE

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

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

Members of the Advisory Committee are:

Dr. Elburt F. Osburn, Chairman, representing the National Academy of Engineering

Dr. James R. Balsley, representing the U.S. Geological Survey

Dr. Robin Brett, representing the National Science Foundation

Dr. John Morgan, representing the Bureau of Mines

Dr. Donald Dahlstrom, representing the National Academy of Sciences

Mr. Donald Calloway, representing coal mine workers

Mr. Richard Holsten, representing industry

Ms. Carolyn Johnson, representing environmental interests

Dr. Fun-den Wang, representing higher education

APPLIED RESEARCH

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

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

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

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

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

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

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

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

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





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

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

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

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

INFORMATION TECHNOLOGY

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

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

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

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

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

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

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

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

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

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

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

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

TECHNICAL TRAINING

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

AUDIOVISUAL INSTRUCTION PROGRAM ON SURFACE MINING

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

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

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

BLASTER TRAINING AND CERTIFICATION

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



BLASTER TRAINING

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

TRIBAL TRAINING

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

TRAINING RESOURCES CLEARINGHOUSE

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

ABANDONED MINE LANDS

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

SURFACE MINING OF NON-COAL MINERALS

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

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

*James Boyd, Chairman,
Consultant*

*Robert E. Bergstrom, Illinois
Geological Survey*

*John R. Borchert, University of
Minnesota*

*James R. Dunn, Dunn Geoscience
Corporation*

*Perry R. Hagenstein, Consultant
Charles W. Hendry, Jr., Florida
Bureau of Geology*

*Donald A. Jameson, Colorado
State University*

*Ronald L. Little, Utah State
University*

*Kenneth L. Ludeke, Monsanto
Agricultural Products
Company*

*Harold E. Malde, U.S. Geological
Survey*

*Fred S. Matter, University of
Arizona*

*Michael McCloskey, Sierra Club
Stanley D. Michaelson,
Consultant*

*Alfred Petrick, Jr., Colorado
School of Mines*

Joe B. Rosenbaum, Consultant

*Lee W. Saperstein, Pennsylvania
State University*

*Arnold J. Silverman, University of
Montana*

*Kenneth N. Weaver, Maryland
Geological Survey*

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

Committee findings were:

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

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

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

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

THE ALASKA STUDY

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

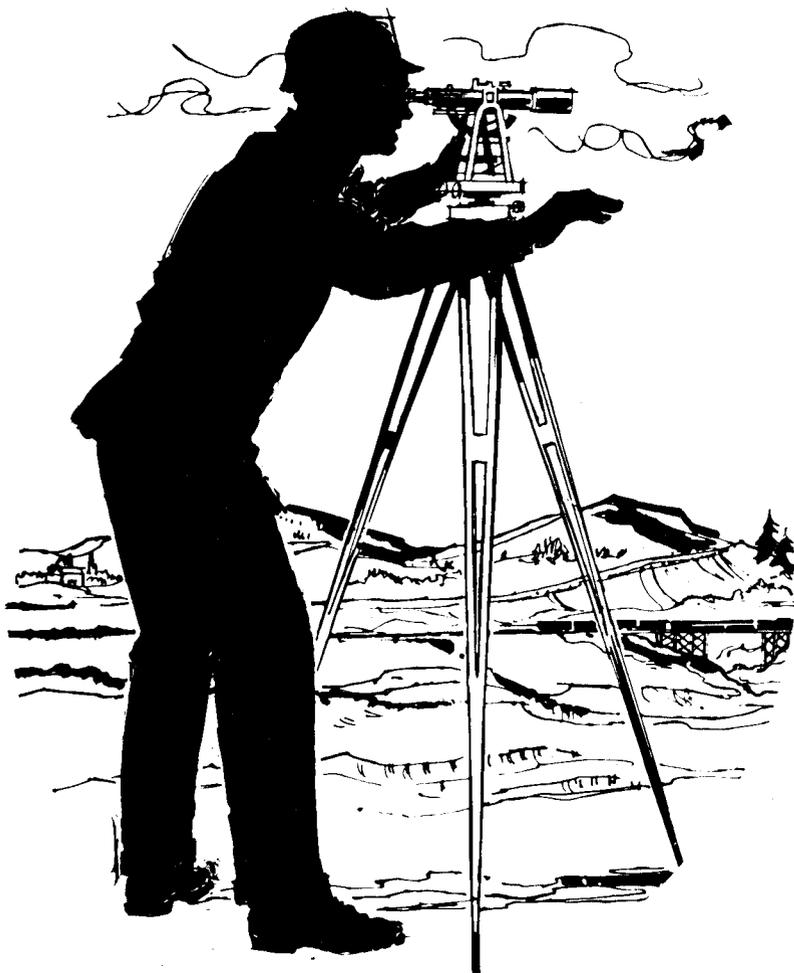
Since August 1978 the NAS committee, staffed by experts representing a cross section of technical and environmental communities, was

charged with the responsibility of reviewing circumstances relating to topographic, climatic, and geologic conditions found in the State of Alaska, then recommending any legislative changes necessary to ensure that realistic provisions pertinent to Alaska were to be developed.

One approach taken by the committee in 1979 was to expose members to living and working conditions in Alaska. To accomplish this, two meetings were scheduled there. The first meeting—in Fairbanks in February—let the committee hear comments and opinions from both public and private sectors. The committee also visited the Corps of Engineers CREEL tunnel which depicted the physical constraints

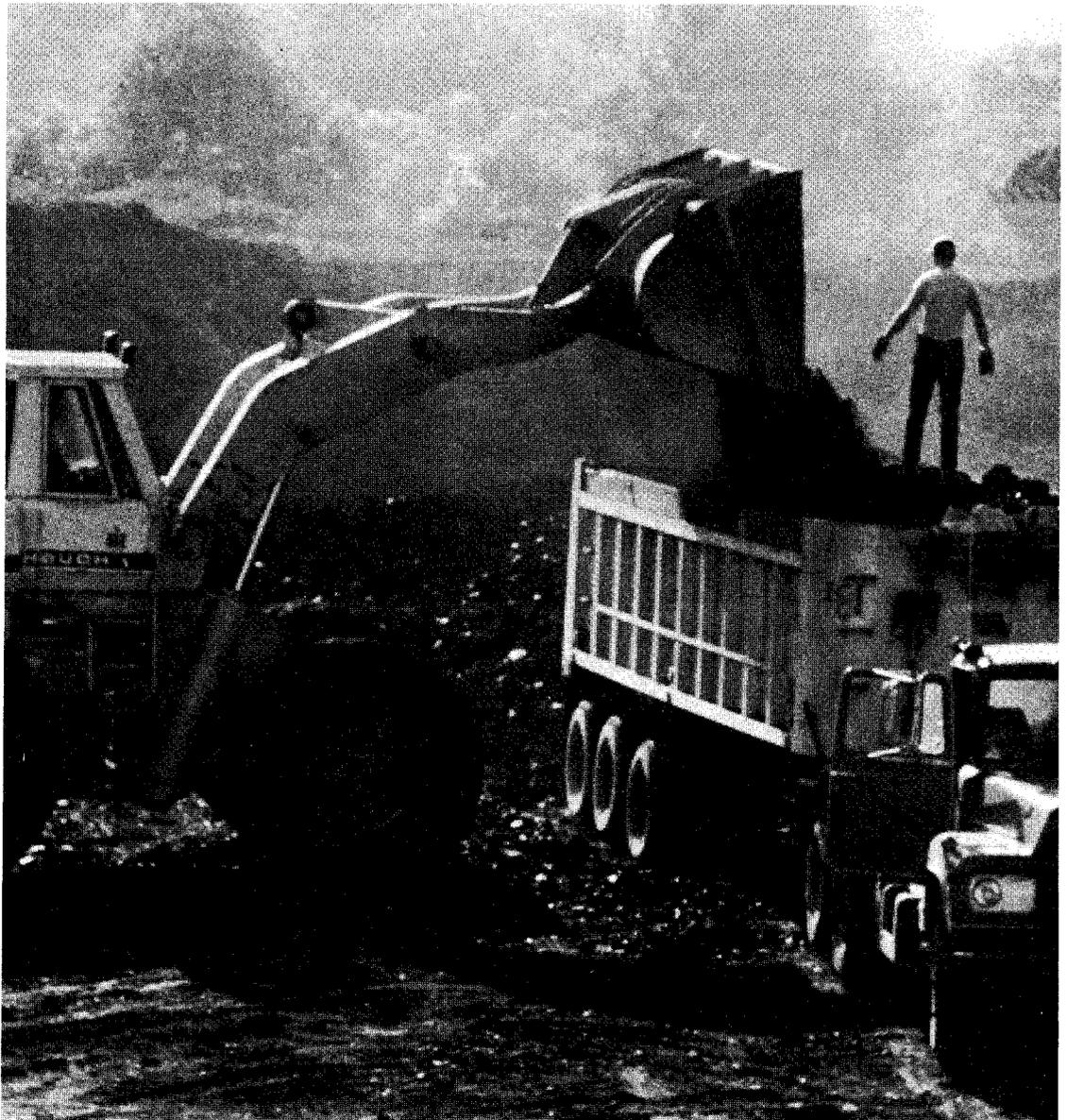
exerted upon engineering practices in permafrost. In July, they returned to Alaska. The entire committee reviewed and observed Placer-Amex, Inc.'s coal exploration activities in the Beluga coalfield near Anchorage. Some members also ventured north to the North Slope coalfields to observe the impact of man's activities on the permafrost and tundra environment.

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



OSM AND THE STATES: A NATIONAL PARTNERSHIP

The Act creates a symbiotic relationship between OSM and coal-producing States in order to ensure the most successful program. Some of the activities and achievements of these States as they move toward that goal are capsulized over the next few pages.



REGION I

MARYLAND

REGULATORY/RECLAMATION AGENCY: Department of Natural Resources

LAWS RELATED TO OSM: Maryland's amendment to its surface mining law was signed May 14, 1979.

PROGRAM PROGRESS: Maryland completed draft regulations for its permanent program, which was under review by the State Attorney General at the end of 1979.

Maryland received the following initial program grants: for 1978, \$158,640; for 1979, \$122,412. In 1979 Maryland also received a program development grant of \$395,560.

State officials estimate there are about 25 small coal operators in Maryland qualified for the SOAP program. The SOAP grants to Maryland totalled \$171,523 by the end of 1979.

TOTAL COAL PRODUCTION IN 1978; 2,810,000 tons

PENNSYLVANIA

REGULATORY/RECLAMATION AGENCY: Department of Environmental Resources

LAWS RELATED TO OSM: Pennsylvania has drafted a proposed State law.

PROGRAM PROGRESS: Regulations on SOAP, coal exploration, and public participation were drafted, but by the end of 1979 had not yet been submitted to an Ad Hoc committee for review. Until Pennsylvania legislation is approved, only non-controversial regulations will be released for public review.

Pennsylvania received the following initial program grants: for 1978, \$232,920; for 1979, \$1,052,602.

OSM will run SOAP on behalf of the State for about 200 eligible small coal operators.

SMMRRI: Pennsylvania State University was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 80,449,000 tons

VIRGINIA

REGULATORY/RECLAMATION AGENCY: Department of Conservation and Economic Development

LAWS RELATED TO OSM: Virginia passed the Virginia Coal Surface Mining Control and Reclamation Act of 1979, Mar. 26, 1979.

PROGRAM PROGRESS: Final work committee meeting for revising regulations was held in late November 1979.

Virginia received the following initial program grants: for 1978, \$626,155; for 1979, \$786,490. The State also received two program development grants: 1978, \$285,989; and 1979, \$71,497.

In addition, Virginia received grants totalling \$987,275 to operate its SOAP program for an estimated 160 small coal operators.

TOTAL COAL PRODUCTION FOR 1978: 27,826,000 tons

WEST VIRGINIA

REGULATORY/RECLAMATION AGENCY: Department of Natural Resources

LAWS RELATED TO OSM: In February 1979 the West Virginia Legislature reenacted the State's revised 1978 law to extend it through implementation of OSM's permanent program.

West Virginia received the following initial program grants: for 1978, \$882,541; for 1979, \$1,222,152. The State received \$693,947 in SOAP grants. About 100 qualified West Virginia small coal operators were identified.

SMMRI: West Virginia University at Morgantown was granted MMRI status, 1978.

TOTAL COAL PRODUCTION FOR 1978: 83,757,000 tons

Production figures supplied by AML Fund records.

ALABAMA

REGULATORY AGENCY: Alabama Surface Mining Reclamation Commission

RECLAMATION AGENCY: Department of Industrial Relations

LAWS RELATED TO OSM: State legislation was drafted to enforce the Act.

PROGRAM PROGRESS: Drafting of permanent regulations began in October 1979. The State's public participation concept for preparation of its State plan was approved. The program plan was estimated to be 30 percent complete at the end of the year.

The State received the following initial program grants: for 1978, \$230,012; for 1979, \$486,936. Alabama received \$998,000 in SOAP grants to cover approximately 200 eligible small coal operators.

SMMRRI STATUS: University of Alabama granted MMRRRI status in 1979.

TOTAL COAL PRODUCTION FOR 1978: 18,806,000 tons

GEORGIA

REGULATORY AGENCY: Department of Natural Resources, Environmental Protection

STATUS OF STATE LAW: None now and none expected.

PROGRAM PROGRESS: Georgia officials notified OSM that it would not seek primacy due to the limited coal mining in the State. OSM will run SOAP for approximately two-four operators.

TOTAL COAL PRODUCTION FOR 1978: 101,000 tons

KENTUCKY

REGULATORY/RECLAMATION AGENCY: Department for Natural Resources and Environmental Protection

LAWS RELATED TO OSM: KRS Chapter 350, revised Sept. 7, 1978.

PROGRAM PROGRESS: Regulations were being prepared, and at the end of 1979 were estimated at 70 percent complete. The program plan was estimated to be 60 percent complete at the end of the year. The public participation concept was approved. The State received the following initial program grants: for 1978, \$2,133,018; and for 1979, \$5,708,043. It also received two program development grants: in 1978, \$1,565,622; and in 1979, \$863,929. Kentucky received \$8,377,654 in SOAP grants. At least 1,250 small coal mine operators were estimated to be eligible for the program in Kentucky.

SMMRRI STATUS: University of Kentucky, Lexington, was granted MMRRRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 119,050,000 tons

MISSISSIPPI

REGULATORY AGENCY: Department of Natural Resources

LAWS RELATED TO OSM: Mississippi Surface Coal Mining and Reclamation Act, enacted April 1979.

PROGRAM PROGRESS: First draft regulations of State regulations reviewed by OSM; minor revisions required. Permanent program submission—received Aug. 2, 1979—was under review. Original submission found incomplete. A public hearing was held in December 1979, in Meridian, Miss. State received a \$116,244 program development grant in 1979.

TOTAL COAL PRODUCTION IN 1978: Coal mining is not expected to begin in Mississippi until 1981.

TENNESSEE

REGULATORY/RECLAMATION AGENCY: Department of Conservation

LAWS RELATED TO OSM: New State law expected.

PROGRAM PROGRESS. Proposed permanent regulations were 50 percent complete at the end of 1979. At that time there had been no OSM review. The regulatory authority was preparing its 13th draft of proposed legislation. The overall program plan was estimated at about 20 percent complete. Formal public participation had not yet been approved. State received the following initial program grants: \$26,240 for 1978; and \$534,162 for 1979.

Tennessee will run its SOAP, but grant had not been approved at the time this report was prepared.

TOTAL COAL PRODUCTION IN 1978: 9,620,000 tons

OHIO

REGULATORY/RECLAMATION AGENCY: Department of Natural Resources

LAWS RELATED TO OSM: Ohio interim law was still in effect at end of 1979.

PROGRAM PROGRESS: Regulations were drafted, but awaiting passage of legislation for promulgation. There had been no OSM review by the end of 1979. Ohio used its own State funds for program development.

The State received the following initial program grants: for 1978, \$370,541; and for 1979, \$1,500,000. Ohio also received \$796,065 in SOAP funds. Officials estimated around 120 eligible small coal operators were in the State.

SMMRRI STATUS: Ohio State University at Columbus was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 39,594,000 tons

INDIANA

REGULATORY/RECLAMATION AGENCY: Department of Natural Resources, Division of Reclamation

LAWS RELATED TO OSM: None.

PROGRAM PROGRESS. Even though Indiana still had litigation pending against OSM at end of 1979, the State regulatory authority had drafted legislation for submittal to the General Assembly. This legislation contained a caveat concerning the pending suit and indicated that the legislation was not intended to prejudice the suit in any way. OSM will operate SOAP on behalf of the State for approximately 185 small coal operators.

TOTAL COAL PRODUCTION IN 1978: 23,422,000 tons

ILLINOIS

REGULATORY AGENCY: Department of Mines and Minerals

RECLAMATION AGENCY: Abandoned Mined Land Reclamation Council

LAWS RELATED TO OSM: Public Act 81-1015, the Surface Coal Mining Land Conservation and Reclamation Act, passed Sept. 22, 1979, effective June 1, 1980.

PROGRAM PROGRESS: Illinois solicited input to draft legislation, and drafted the permanent regulatory program. The State reclamation plan was five percent complete by the end of 1979. Illinois used State funds for program development.

Illinois received the following initial program grants; for 1978, \$398,435; and for 1979, \$1,000,000. It also received \$312,500 in SOAP start-up funds. There were about 30 qualified small coal operators in Illinois.

SMMRRI: Southern Illinois University at Carbondale was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 47,856,000 tons

REGION IV

ARKANSAS

REGULATORY/RECLAMATION AGENCY: Arkansas Department of Pollution Control and Ecology

NEW LAW RELATED TO OSM: Arkansas Surface Coal Mining and Reclamation Act, 1979.

PROGRAM PROGRESS: Arkansas submitted a draft of its proposed permanent program to OSM on Oct. 29, 1979. After reviewing it unofficially for completeness and adequacy, OSM returned its comments to the State in December.

The State received the following initial program grants: \$65,055 for 1978; and \$152,496 for 1979. In 1979 Arkansas was awarded a program development grant of \$73,465.

TOTAL COAL PRODUCTION IN 1978: 506,000 tons

IOWA

REGULATORY/RECLAMATION AGENCY: Iowa Department of Soil Conservation, Mines and Minerals Division

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

PROGRAM PROGRESS: A first draft of Iowa's permanent program regulations was 50 percent complete. Iowa received the following initial program grants: \$44,599 for 1978; and \$83,310 for 1979. The State also was awarded a program development grant of \$28,600 in 1978.

TOTAL COAL PRODUCTION IN 1978: 443,000 tons

KANSAS

REGULATORY/RECLAMATION AGENCY: Kansas Corporation Commission

NEW LAW RELATED TO OSM: Mined-Land Conservation and Reclamation Act, 1979.

PROGRAM PROGRESS: Draft regulations for the permanent program were under State review at the end of 1979.

Kansas received the following initial program grants: \$48,379 for 1978; and \$95,343 for 1979. The State was awarded a program development grant of \$41,632 in 1979.

TOTAL COAL PRODUCTION IN 1978: 1,220,000 tons

LOUISIANA

REGULATORY/RECLAMATION AGENCY: Louisiana Department of Natural Resources

NEW LAW RELATED TO OSM: Surface Mining and Reclamation Act

PROGRAM PROGRESS: Louisiana contracted a law firm to prepare its permanent program submission. Draft regulations were completed, and a public hearing on the proposed program was held on Nov. 14, 1979.

The State received a \$102,811 program development grant in 1979.

TOTAL COAL PRODUCTION IN 1978: Louisiana coal production is expected to begin in 1981 in DeSoto Parish, with several lignite mines coming into production in a five-year period. There is no commercial coal mining in Louisiana now.

MISSOURI

REGULATORY/RECLAMATION AGENCY: Missouri Department of Natural Resources

NEW LAW RELATED TO OSM: Strip Mine Law

PROGRAM PROGRESS: Draft regulations for the permanent program were reviewed and commented upon. Missouri held a public hearing on its proposed program on Dec. 4, 1979. The draft program was submitted to OSM on Sept. 20, 1979. OSM first reviewed the regulations and offered unofficial comments to Missouri on Oct. 10, 1979. The balance of the program was under review by OSM at the end of 1979.

The State received the following initial program grants: \$46,412 for 1978; and \$164,218 for 1979. A program development grant of \$125,744 was awarded in 1978.

OSM will administer the SOAP on behalf of Missouri during the initial regulatory program. By the end of 1979 two small operators already had expressed interest in participating.

SMMRRI STATUS: The University of Missouri at Rolla was granted MMRI status in 1978.

TOTAL COAL PRODUCTION 5,621,000 tons

OKLAHOMA

REGULATORY AGENCY: Department of Mines

RECLAMATION AGENCY: Oklahoma Conservation Commission

NEW LAW RELATED TO OSM: Coal Reclamation Act of 1979

PROGRAM PROGRESS: Draft regulations for the permanent program were completed.

The State received the following initial program grants: \$121,182 for 1978; and \$468,249 for 1979. Oklahoma was awarded a program development grant of \$205,462 in 1978.

A \$208,600 SOAP operational grant was given to Oklahoma in 1979.

SMMRRI STATUS: The University of Oklahoma at Norman was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 5,568,000 tons

TEXAS

REGULATORY/RECLAMATION AGENCY: Texas Railroad Commission

NEW LAW RELATED TO OSM: Texas Surface Coal Mining and Reclamation Act

PROGRAM PROGRESS: Texas proposed permanent program regulations and held public meetings on them. On July 20, 1979, Texas became the first State in the Nation to submit to OSM an official proposal for a permanent program. OSM held a public review meeting, Sept. 5, 1979, to discuss the completeness of the proposal. A meeting to discuss the necessary amendments took place between OSM and Texas Railroad Commission representatives on Oct. 18 and 19, 1979. Amended regulations were received by Region IV on Nov. 13, 1979. OSM held a public hearing on the substance of the proposal Dec. 19 and 20, 1979, in Austin.

The State received initial program grants in the following amounts: \$196,089 for 1978; and \$208,951 for 1979. Texas was awarded a program development grant of \$185,634 for 1979.

As there were no small operators in Texas, the State did not initiate a SOAP under the initial regulations.

SMMRRI STATUS: The University of Texas at Austin was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 20,061,000 tons

REGION V

ALASKA

PROGRAM PROGRESS: A number of outstanding issues related to Alaska's program may have to await formulation and resolution until after the completion of the Alaska Study and Departmental response mandated by the Act. Study scheduled for completion by May 31, 1980.

SMMRRI STATUS: The University of Alaska at Fairbanks was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 728,000 tons

ARIZONA

PROGRAM PROGRESS: All current coal production is on Indian lands.

SMMRRI STATUS: The University of Arizona at Tucson was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 8,974,000 tons

CALIFORNIA

PROGRAM PROGRESS: No current coal mining under the Act, but State Department of Conservation was exploring amendment of existing legislation in anticipation of future production.

SMMRRI STATUS: The University of California at Berkeley was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: None.

COLORADO

REGULATORY/RECLAMATION AGENCY: Department of Natural Resources

NEW LAWS RELATED TO OSM: Colorado Surface Coal Mining Reclamation Act of 1979 and Colorado Mined Land Reclamation Act of 1976.

PROGRAM PROGRESS: Major revisions in the legislation were completed to permit significant strengthening of State programs. A cooperative agreement covering Federal lands was in preparation at the end of 1979.

The State received the following initial program grants: \$42,281 for 1978; and \$254,069 for 1979. Colorado also was awarded the following program development grants; \$71,007 for 1978; \$264,395 for 1979.

Colorado will run SOAP, but the grant had not been approved by the end of 1979. There are approximately 35 eligible small operators in Colorado.

SMMRRI STATUS: The Colorado School of Mines at Golden was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 13,477,000 tons

MONTANA

REGULATORY/RECLAMATION AGENCY: Montana Department of State Lands

NEW LAWS RELATED TO OSM: Montana Strip and Underground Reclamation Act, as amended by S515, HB406, and 739, 1979.

PROGRAM PROGRESS: The proposed permanent program was submitted in 1979 based on revised statutes and regulations. A modified cooperative agreement covering Federal land also was approved during the year.

The State received the following initial program grants: \$58,111 for 1978; and \$87,644 for 1979. Montana also was awarded a program development grant of \$150,966 in 1979.

Montana will run SOAP, but its grant application had not been submitted yet.

SMMRRI STATUS: Montana College of Mineral Sciences and Technology was granted MMRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 26,555,000 tons

NEW MEXICO

REGULATORY/RECLAMATION AGENCY: Energy and Minerals Department

NEW LAW RELATED TO OSM: New Mexico Surface Mining Act of 1979, enacted Mar. 17, 1979.

PROGRAM PROGRESS: Regulations for the permanent program were being drafted at the end of 1979 and the program was under development. A new cooperative agreement covering Federal lands was in preparation at the end of the year.

The State received the following initial program grants: \$67,742 for 1978; and \$139,744 for 1979. New Mexico also received a program development grant of \$149,954 in 1979.

OSM will run SOAP on behalf of New Mexico.

SMMRRI STATUS: New Mexico Institute of Mining and Technology

TOTAL COAL PRODUCTION IN 1978: 12,528,000 tons

NORTH DAKOTA

REGULATORY/RECLAMATION AGENCY: North Dakota Public Service Commission

NEW LAWS RELATED TO OSM: North Dakota Century Code, Chapter 38: Reclamation of Surface Mined Lands, as amended by Surface Mine Reclamation Act of 1979, Abandoned Mine Lands Reclamation Act of 1979, Surface Owners Protection Act of 1979, and Coal Exploration Act of 1979.

PROGRAM PROGRESS: Amendments to statutory authority were enacted, and regulations in preparation by the end of 1979. Proposed modifications to cooperative agreements covering Federal lands also were adopted.

The State received the following initial program grants: \$248,375 for 1978; and \$199,409 for 1979. North Dakota also was awarded two program development grants: \$462,624 for 1978; and \$589,200 for 1979.

TOTAL COAL PRODUCTION IN 1978: 13,984,000 tons

UTAH

REGULATORY/RECLAMATION AGENCY: Department of Natural Resources, Division of Oil, Gas and Mining

NEW LAWS RELATED TO OSM: Utah Mined Land Reclamation Act of 1953, as amended, (1979), Title 40, Chapter 8.

PROGRAM PROGRESS: Utah's legislature passed the State's Coal Reclamation Act in March 1979. Regulations to implement State law were being drafted at the end of 1979. The cooperative agreement covering Federal lands also was modified.

The State was awarded the following initial program grants: \$62,000 for 1978; and \$146,556 for 1979. Utah received a program development grant of \$141,380 for 1979.

OSM will run SOAP for approximately four small operators.

SMMRRI: The University of Utah at Salt Lake City was granted MMRRRI status in 1978.

TOTAL COAL PRODUCTION IN 1978: 8,733,000 tons

WASHINGTON

PROGRAM PROGRESS: The State declined to submit a permanent program.

OSM will run SOAP for one small operator.

TOTAL COAL PRODUCTION IN 1978: 4,699,000 tons

WYOMING

REGULATORY/RECLAMATION AGENCY: Department of Environmental Quality

NEW LAW RELATED TO OSM: Wyoming State Environmental Quality Act as amended, 1978.

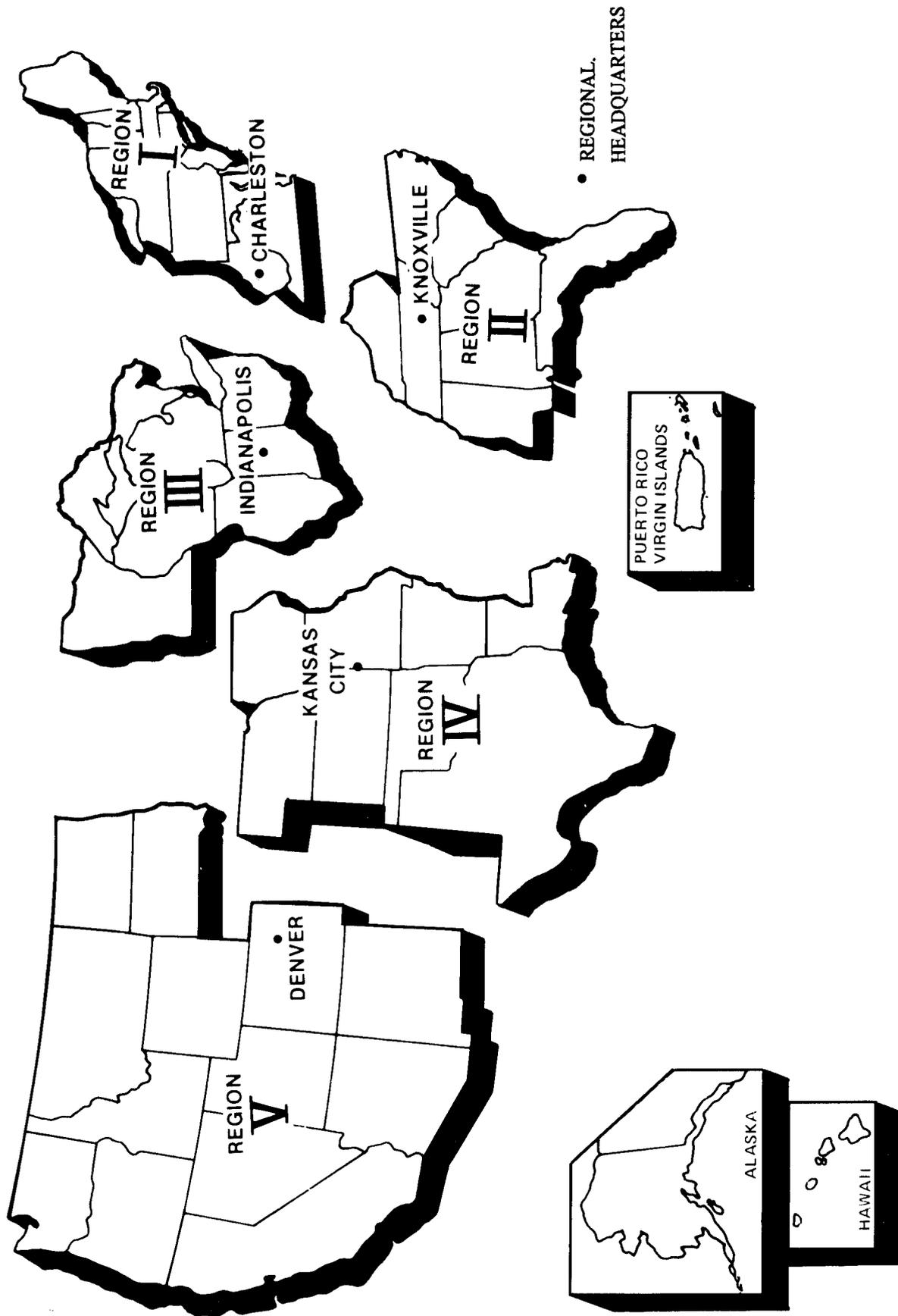
PROGRAM PROGRESS: A proposed permanent regulatory program was submitted in August 1979. The cooperative agreement covering Federal lands also was modified in 1979.

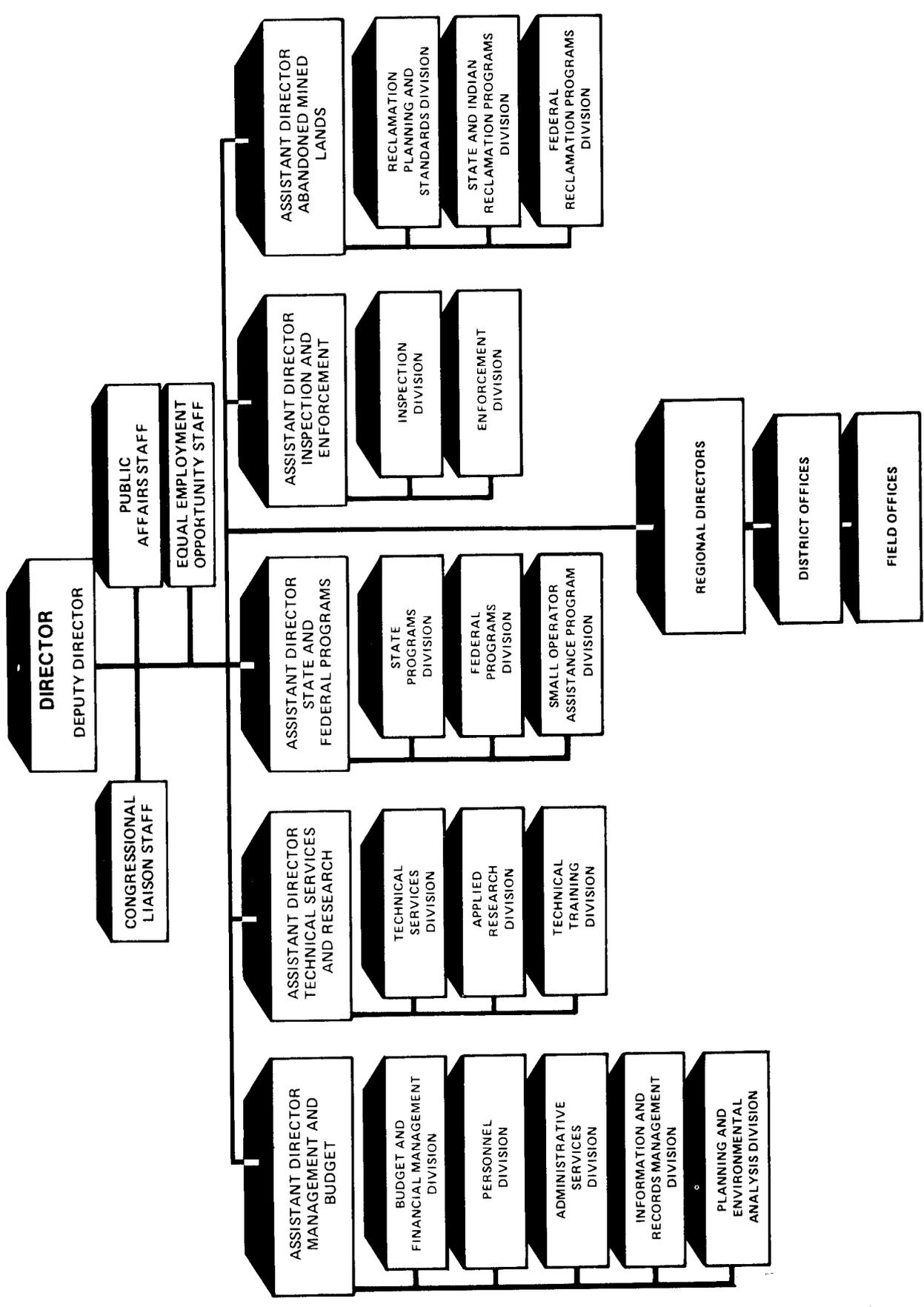
The State received the following program grants: \$38,201 for 1978; and \$482,721 for 1979. Wyoming was awarded a program development grant of \$288,625 for 1978.

OSM will run SOAP for Wyoming for approximately four small operators.

SMMRRI STATUS: The University of Wyoming at Laramie was granted MMRR1 status in 1978.

TOTAL COAL PRODUCTION IN 1978: 58,110,000 tons





**I-1 Office of Surface Mining Appropriations, by Activity, Fiscal Years
1978-79-80, with 1981 Budget Estimates (in millions of dollars)**

<i>Activity</i>	<i>FY 1978 Actual</i>	<i>FY 1979 Actual</i>	<i>FY 1980 Actual</i>	<i>FY 1981 Estimates</i>
REGULATION AND TECHNOLOGY				
<i>State Regulatory Program Grants:</i>				
Initial Regulatory Program	6.1	13.4	n/a	n/a
Permanent Program Development	5.0	4.0	n/a	n/a
Permanent Program Operations	—	1.5	n/a	n/a
Subtotal—State Regulatory Program Grants	\$11.1	\$ 18.9	\$ 21.7	\$ 36.2
<i>Federal Regulatory Programs:</i>				
State and Federal Programs	2.8	4.0	14.4	26.6
Federal Inspection and Enforcement	5.5	13.4	16.6	20.2
Technical Services	5.8	6.8	7.0	7.7
Subtotal—Federal Regulatory Programs	\$14.1	\$ 24.2	\$ 38.0	\$ 54.5
<i>Mineral Institutes:</i>				
Grants	5.4	5.4	9.7	9.2
Program Administration	0.3	0.4	0.3	.4
Subtotal—Mineral Institutes	\$ 5.7	\$ 5.8	\$ 10.0	\$ 9.6
<i>Small Operator Assistance Payments:</i>				
Subtotal—Small Operator Assistance Payments	—	\$ 5.0	\$ 15.0	—
TOTAL—REGULATION AND TECHNOLOGY	\$30.9	\$ 53.9	\$ 84.7	\$100.3
ABANDONED MINE RECLAMATION FUND				
<i>State Reclamation Grants:</i>	—	10.0	25.0	45.0
Subtotal—State Reclamation Grants	\$ —	\$ 10.0	\$ 25.0	\$ 45.0
<i>Federal Reclamation Programs:</i>				
Fund management	4.8	8.7	9.1	5.4
Interior Reclamation Projects	15.8	21.9	39.5	15.2
Technical Support	1.0	0.8	1.2	1.7
Rural Lands Program	5.0	10.1	10.1	10.2
Subtotal—Federal Reclamation Programs	\$26.6	\$ 41.5	\$ 59.9	\$ 32.5
<i>Small Operator Assistance Payments:</i>				
Subtotal—Small Operator Assistance Payments	\$10.0	\$ 10.0	\$ 10.0	\$ 10.0
TOTAL—ABANDONED MINE RECLAMATION FUND	\$36.6	\$ 61.5	\$ 94.9	\$ 87.5
GRAND TOTAL—OFFICE OF SURFACE MINING	\$67.5	\$115.4	\$179.6	\$187.8

I-2 Office of Surface Mining Fiscal Year 1979 Appropriations, Obligations, and Unobligated Balances (in millions of dollars)

<i>Activity</i>	<i>Appropriations Available¹</i>	<i>Obligations</i>	<i>Unobligated Balance</i>
REGULATION AND TECHNOLOGY:			
<i>State Regulatory Program Grants:</i>			
Initial Regulatory Program	14.9	14.4	.5
Permanent Program Development	<u>4.0</u>	<u>3.0</u>	<u>1.0</u>
Subtotal—State Regulatory Program Grants	\$ 18.9	\$17.4	\$ 1.5
<i>Federal Regulatory Programs:</i>			
Regulatory Program Standards and Evaluation	4.0	3.9	.1
Federal Inspection and Enforcement	13.4	12.5	.9
Technical Services	<u>6.8</u>	<u>6.6</u>	<u>.2</u>
Subtotal—Federal Regulatory Programs	\$ 24.2	\$23.0	\$ 1.2
<i>Mineral Institutes:</i>			
Grants	5.4	5.4	—
Program Administration	<u>0.4</u>	<u>0.2</u>	<u>0.2</u>
Subtotal—Mineral Institutes	\$ 5.8	\$ 5.6	\$ 0.2
<i>Small Operator Assistance Payments:</i>			
Subtotal—Small Operator Assistance Payments	<u>5.0</u>	<u>5.0</u>	<u>—</u>
	\$ 5.0	\$ 5.0	—
TOTAL—REGULATION AND TECHNOLOGY	\$ 53.9	\$51.0	\$ 2.9
ABANDONED MINE RECLAMATION FUND:			
<i>State Reclamation Grants:</i>			
Subtotal—State Reclamation Grants	<u>10.0</u>	<u>2.8</u>	<u>7.2</u>
	\$ 10.0	\$ 2.8	\$ 7.2
<i>Federal Reclamation Programs:</i>			
Fund Management	9.4	3.8	5.6
Interior Reclamation Projects	37.2	14.1	23.1
Technical Support	1.8	.9	.9
Rural Lands Program	<u>14.7</u>	<u>10.4</u>	<u>4.3</u>
Subtotal—Federal Reclamation Programs	\$ 63.1	\$29.2	\$33.9
<i>Small Operator Assistance Payments:</i>			
Subtotal—Small Operator Assistance Payments	<u>20.0</u>	<u>7.6</u>	<u>12.4</u>
	20.0	7.6	12.4
TOTAL—ABANDONED MINE RECLAMATION FUND	\$ 93.1	\$39.6	\$53.5
GRAND TOTAL—OFFICE OF SURFACE MINING	\$147.0	\$90.6	\$56.4

¹includes available balances of prior year Abandoned Mine Reclamation Fund appropriations.

I-3 Office of Surface Mining Staffing at End of Fiscal Year 1979^a

<i>Permanent Positions by Location</i>	<i>Author- ized Persons</i>	<i>On Duty</i>	<i>Selected;</i>		<i>Vacancies</i>
			<i>Not Yet Reported</i>	<i>Total Selected</i>	
Washington, D.C. ^b	271	249	5	254	17
Region I	229	198	11	209	20
Region II	211	199	2	201	10
Region III	117	111	1	112	5
Region IV	92	85	1	86	6
Region V	102	75	5	80	22
TOTAL, Permanent Positions	1,022	917	25	942	80
<i>Ceilings for Permanent and Temporary Positions</i>					
Permanent Employment Ceiling,					
FY 1979 ^c	935	917	25	942	(22)
Temporary Positions	108	28	1	29	79
TOTAL, Ceilings	1,043	945	26	971	57

^a Data as of September 30, 1979.

^b Excludes 13 positions allocated to the U.S. Bureau of Mines for accounting support to OSM.

^c The difference between authorized positions and employment ceiling is the expected number of vacancies at the end of the fiscal year, due to employees turnover, recruiting time, etc. The figures include six worker-trainee positions and one end-of-year position transferred from Trust Territories.

II-1 Abandoned Mine Lands Reclamation Fund Status as of September 30, 1979

States	Fiscal 1979		Cumulative Totals to Date		
	Total Revenues ¹	Allocations to States or Tribes ²	Revenues ¹	Allocations ²	Funds Transferred to States
Alabama	\$ 5,761,848.54	\$ 2,880,924.27	\$ 8,405,347.55	\$ 4,202,673.78	\$ 176,300.00
Alaska	255,589.43	127,794.72	452,034.53	226,017.27	
Arizona	—0—	—0—	—0—	—0—	
Arkansas	127,827.33	63,913.67	203,687.13	101,843.57	60,000.00
Colorado	4,464,179.35	2,232,089.68	6,947,910.61	3,473,955.31	505,313.00
Georgia	7,787.10	3,893.55	17,848.26	8,924.13	
Illinois	14,795,666.99	7,397,833.50	21,452,103.12	10,726,051.57	130,000.00
Indiana	9,426,032.04	4,713,016.02	14,224,128.16	7,112,064.08	
Iowa	144,779.75	72,389.88	231,940.42	115,970.22	25,000.00
Kansas	304,517.18	152,258.59	668,383.03	334,191.52	
Kentucky	31,177,345.41	15,588,672.71	51,562,365.03	25,781,182.52	569,617.00
Maryland	793,270.28	396,635.14	1,293,500.48	646,750.24	
Missouri	2,377,721.03	1,188,860.52	3,429,469.99	1,714,735.00	84,085.88
Montana	10,827,453.47	5,413,726.74	16,201,855.38	8,100,927.70	116,268.00
New Mexico	5,787,763.49	2,893,881.75	6,872,632.42	3,436,316.22	227,905.00
North Dakota	1,260,367.83	630,183.92	2,175,428.47	1,087,714.24	
Ohio	11,911,196.19	5,955,598.10	19,412,163.37	9,706,081.69	313,500.00
Oklahoma	1,805,947.65	902,973.83	3,072,380.58	1,536,190.30	74,650.94
Pennsylvania	22,949,563.02	11,474,781.51	35,272,687.62	17,636,343.81	
Tennessee	2,048,049.15	1,024,024.58	3,684,543.45	1,842,271.73	128,707.00
Texas	2,295,433.50	1,147,716.75	3,453,084.73	1,726,542.37	81,980.00
Utah	1,571,423.85	785,711.93	2,339,575.24	1,169,787.63	
Virginia	5,933,957.06	2,966,978.53	10,439,766.30	5,219,883.15	203,081.81
Washington	1,603,547.40	801,773.70	2,933,005.08	1,466,502.54	
West Virginia	19,578,398.31	9,789,199.16	29,288,901.90	14,644,450.96	413,479.00
Wyoming	21,516,123.11	10,758,061.56	35,362,552.63	17,681,276.32	
Crow Tribe	1,633,389.90	816,694.90	2,810,652.95	1,405,326.48	156,545.00
Hopi Tribe	391,676.94	195,838.47	635,382.65	317,691.33	
Navajo Tribe	4,809,880.74	2,404,940.37	8,146,466.48	4,073,233.24	
TOTAL	\$185,560,735.94	\$92,780,368.05	\$290,989,797.56	\$145,494,898.92	\$3,266,432.63

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 to States as grants-in-aid. Appropriation of \$10 million for FY 1979 was made in the expectation that some State plans would be approved in the fiscal year.

II-2 Abandoned Mine Reclamation Fund Projects, by Category, as of September 30, 1979

Summary by Category and by Region (Dollars)

<i>CATEGORY</i>	<i>Region I</i>	<i>Region II</i>	<i>Region III</i>	<i>Region IV</i>	<i>Region V</i>	<i>Total All Regions</i>
Declared Emergency-completed in FY 79	\$ 138,500	\$ 172,353	\$ 82,703	\$ —	\$ 50,500	\$ 444,056
Declared Emergency-under construction in FY 1979	\$ 406,000	\$ —	\$ 65,500	\$ —	\$ 30,500	\$ 502,000
High Priority—completed in FY 1979	\$ 169,600	\$ —	\$ 103,380	\$ —	\$ 24,000	\$ 296,980
Projects under construction in FY 1979	\$ 4,408,366	\$ 513,053	\$1,041,500	\$ —	\$ 42,450	\$ 6,005,369
Projects with cooperative agreements or contracts signed and construction not started	\$ 3,962,000	\$ 2,034,434	\$ 738,000	\$ 20,000	\$ 26,250	\$ 6,780,684
Projects with scope of work developed but no cooperative agreement or contract issued	\$ 2,439,800	\$ 7,975,024	\$ 379,000	\$2,603,000	\$230,000	\$13,626,824
Projects with eligibility determined but scope of work not developed	\$ —	\$ —	\$ 100,000	\$ 455,000	\$ —	\$ 555,000
Projects identified with no other action taken	<u>\$ 6,738,000</u>	<u>\$12,050,000</u>	<u>\$ 25,000</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$18,813,000</u>
	\$18,262,266	\$22,744,864	\$2,535,083	\$3,078,000	\$403,700	\$47,023,913

II-3 Abandoned Mine Reclamation Fund, Projects in FY 1979, by Category

Summary of All Federal Reclamation Projects

	<i>Projects</i>	<i>Funds</i>
Emergency Projects		
Completed in FY 79	23	\$ 444,056
Under Construction in FY 79	6	502,000
High Priority Projects		
Completed in FY 79	16	296,980
Under Construction in FY 79	19	6,005,369
With Approved Cooperative Agreements	41	6,780,684
With Scope of Work Developed	41	13,626,824
With Eligibility Determined	8	555,000
Identified	<u>41</u>	<u>18,813,000</u>
Total All Projects	195	\$47,023,913

Declared Emergency—Completed in FY 1979

REGION I

Monongahela Flooding	Allegheny Co., PA	\$ 6,500
Brisbin Subsidence	Clearfield Co., PA	60,000
Taylor Shaft	Lackawanna Co., PA	6,000
Askew Subsidence (Plymouth)	Luzerne Co., PA	5,000
Lee Street Subsidence (Plymouth)	Luzerne Co., PA	5,000
Montaro Subsidence	Scranton, PA	12,000
Pina Subsidence	Providence Co., RI	3,000
Pecks Run Subsidence	Upshur Co., WV	35,000
Verge Subsidence	Marion Co., WV	2,000
Weirton Subsidence	Hancock Co., WV	4,000

REGION II

Bakers Branch Slide	Johnson Co., KY	\$ 41,115
Boons Camp Slide	Johnson Co., KY	14,800
Colly Creek Slide	Letcher Co., KY	40,000
Millstone Slide	Letcher Co., KY	17,647
Dorton Slide	Pike Co., KY	58,791

REGION III

Million Subsidence	LaSalle Co., IL	\$ 1,200
Gas Blowout	Saline Co., IL	43,963
O'Fallon Gob Pile Fire	St. Clair Co., IL	3,500
Litton Subsidence (Energy)	Williamson Co., IL	9,290
Johnson Subsidence	Perry Co., OH	24,750

REGION V

Lafayette Air Shaft	Boulder Co., CO	23,000
Klondike Mine Air Shaft	El Paso Co., CO	7,500
Monarch Mine Fire	Sheridan Co., WY	20,000

TOTAL—All Regions

\$444,056

Declared Emergency—Under Construction in FY 1979

REGION I

West Mifflin Water Imp. (Phase I)	Allegheny Co., PA	\$ 6,000
Pierce Street Subsidence	Scranton, PA	200,000
Vandergrift Subsidence	Westmoreland Co., PA	200,000

REGION III

Fowler Subsidence (Energy)	Williamson Co., IL	\$ 1,500
Snyder Youngblood Subsidence	Williamson Co., IL	64,000

REGION V

Portal Park Subsidence	El Paso Co., CO	\$ 30,500
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TOTAL—All Regions

\$502,000

HIGH PRIORITY (Section 403)

Projects Completed in FY 1979

REGION I

Belle Vernon Subsidence	Fayette Co., PA	\$ 6,000
Archbald Flooding	Lackawanna Co., PA	69,000
Nutter Fort School Landslide	Harrison Co., WV	75,000
*Fairmont Mine Subsidence	Marion Co., WV	19,600

REGION III

Saint David Shaft	Fulton Co., IL	13,275
Seneca Shaft	LaSalle Co., IL	6,820
Seneca A Shaft	LaSalle Co., IL	4,975
Streator Subsidence	LaSalle Co., IL	4,283
Berlin Shaft	Sangamon Co., IL	12,425
*Primovic Mudslide	Belmont Co., OH	8,500
Pomeroy Mudslide	Meigs Co., OH	33,161
Dennison Subsidence	Tuscarawas Co., OH	19,941

REGION V

Davidson Ditch Subsidence	Boulder Co., CO	\$ 3,250
*Scranton Subsidence (Phase I)	Bowman Co., ND	5,750
Engel Subsidence	King Co., WA	5,000
Bevan Subsidence	Pierce Co., WA	10,000

TOTAL—All Regions \$296,980

*Identified in '78 Annual Report \$ 33,850
Identified in FY 1979 263,130

Projects Under Construction in FY 1979

REGION I

*Frostburg College Subsidence	Allegany Co., MD	\$1,007,000
Jefferson Borough Landslide	Allegheny Co., PA	20,000
*St. Charles Flood Control	Lee Co., VA	1,381,366
*Peach Creek Burning Refuse	Logan Co., WV	2,000,000

REGION II

*Cranks Creek Sedimentation	Harlan Co., KY	498,053
Big Creek Biological Monitoring	Grundy Co., TN	15,000

REGION III

Maple Grove Shaft	Vigo Co., IN	\$ 75,000
Miami #10 Shaft	Vigo Co., IN	45,000
Illinois Mine Entry Inventory	IL	12,000
Sessor Open Shaft	Franklin Co., IL	99,000
Chicago & Springfield Shafts	Sangamon Co., IL	22,000
Wasson #1 Mine Gas	Saline Co., IL	49,000
*O'Fallon Mine Subsidence	St. Clair Co., IL	100,000
*Tri-County Subsidence Survey	OH	200,000
Cumberland Landslide	Guernsey Co., OH	10,000
La Grange Landslide	Lawrence Co., OH	30,000
Syracuse Coal & Salt Shaft	Meigs Co., OH	26,500
*Youngstown Curtis School Subsidence	Trumbull Co., OH	373,000

REGION V

Old Klondike Hoist Shaft	El Paso Co., CO	\$ 42,450
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TOTAL—All Regions \$6,005,369

*1978	\$5,559,419
1979	445,950

Projects With Cooperative Agreements or Contract Signed and Construction Not Started

REGION I

Barton Mine Drainage	Allegany Co., MD	\$ 96,500
*Clearfield Mine Drainage	Clearfield Co., PA	180,000
*Munson Mine Drainage	Clearfield Co., PA	24,000
*Johnson Hollow Mine Flooding	Fayette Co., PA	120,000
*Percy Mine Fire	Fayette Co., PA	2,149,000
*Plummer-Puritan Mine Fire	Fayette Co., PA	135,000
*Perry Mine Seal	Jefferson Co., PA	27,000
*Eddy Creek Mine Shaft	Lackawanna Co., PA	27,000
*Storrs Strip Mine Pit	Lackawanna Co., PA	391,000
*Ewen Mine Shaft	Luzerne Co., PA	25,000
*Otto Mine Shaft	Schuylkill Co., PA	59,000
*Wadesville Mine Shaft	Schuylkill Co., PA	56,000
*Cross Creek Mine Seal	Washington Co., PA	16,000
Oakwood Gob Pile	Buchanan Co., VA	656,500

REGION II

Marvel Mine Shafts	Bibb Co., AL	20,000
*Nauvoo I Highwall	Walker Co., AL	285,000
*Nauvoo II Highwall	Walker Co., AL	140,000
Radiant City Water Impoundment	Walker Co., AL	60,000
Townley-West Mud Slide	Walker Co., AL	47,950
*Wallins Creek Sedimentation Study	Harlan Co., KY	9,500
Buffalo Creek Slide	Johnson Co., KY	13,589
*Cypress Creek Flooding (Phase I & II)	Muhlenberg Co., KY	54,233
*Cypress Creek Flooding (Phase III)	Muhlenberg Co., KY	676,875
McHenry Sedimentation	Ohio Co., KY	75,969
Shelby Creek Slide	Pike Co., KY	22,607
Smith Fork Slide	Pike Co., KY	458,759
Newcomb Flooding (Phase I)	Campbell Co., TN	43,800
Big Creek Water Supply (Phase I)	Grundy Co., TN	126,152

REGION III

Carlinsville Open Shaft	Macoupin Co., IL	\$ 51,000
Carrier Mills Shaft	Saline Co., IL	25,000
O'Gara Mine Gas	Saline Co., IL	80,000
New Black Diamond #4 Shaft	Williamson Co., IL	97,000
Bench Street Mudslide	Belmont Co., OH	330,000
Tippecanoe Shaft	Mahoning Co., OH	90,000
Pomeroy Mudslide (Phases II & III)	Meigs Co., OH	65,000

REGION IV

*Midway Abandoned Highwall	Coal Co., OK	\$ 20,000
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REGION V

Black Diamond Shaft	McKinley Co., NM	\$ 8,500
Chiaromonte Subsidence	McKinley Co., NM	4,000
Juliana Subsidence	McKinley Co., NM	3,000
Kauzlarich Open Pits	McKinley Co., NM	7,500
Southwestern Atherton Shaft	McKinley Co., NM	3,500

TOTAL—All Regions \$6,780,684

*1978 \$4,394,608

1979 \$2,386,076

Projects With Scope of Work Developed With No Cooperative Agreement or Contract Issued

REGION I

Mechanicsville Mine Drainage	Clarion Co., PA	\$ 30,000
Scranton Sewerline Subsidence	Lackawanna Co., PA	80,000
*Auchincloss Colliery Shaft	Luzerne Co., PA	56,000
Delaware Colliery Shaft	Luzerne Co., PA	19,000
*Exeter Red Ash Shaft	Luzerne Co., PA	30,000
*Nottingham Colliery Shaft	Luzerne Co., PA	11,000
*Peach Orchard Colliery Shaft	Luzerne Co., PA	47,000
Sharon Street Subsidence	Mercer Co., PA	40,000
Grundy Landslide	Buchanan Co., VA	36,300
Bowser Hollow Fire	Wise Co., VA	165,500
*Darby Hollow Refuse Fire	Boone Co., WV	150,000
*Holden #1 Gob Pile	Logan Co., WV	1,000,000
Masontown Mine Drainage	Preston Co., WV	775,000

REGION II

Smith Mine Shaft	Bibb Co., AL	\$ 31,670
Lake Lahusage	De Kalb Co., AL	130,000
Riceton Mine Subsidence	Walker Co., AL	6,200
Straight Creek Sedimentation	Bell Co., KY	51,414
Mason Street Subsidence	Boyd Co., KY	18,450
Drift Mine Fire	Floyd Co., KY	9,900
Baker Branch Slide	Johnson Co., KY	748,000
Osborne Slide	Johnson Co., KY	500,000
Big Fork Creek Slide	Knott Co., KY	229,690
Hurricane Branch Slide	Pike Co., KY	50,000
Lick Creek Flooding	Anderson Co., TN	97,500
Big Creek Water Pollution (Phase II)	Grundy Co., TN	6,000,000
Smith Cove Road	Van Buren Co., TN	102,200

REGION III

Little John #5 Open Shaft	Knox Co., IL	\$ 80,000
Kickapoo Mine Identification	Vermillion Co., IL	99,000
Koval Open Shaft	Guernsey Co., OH	40,000
Fulk Shaft	Mahoning Co., OH	50,000
Lynn Shaft	Mahoning Co., OH	50,000
Osborn Air Shaft	Mahoning Co., OH	20,000
Polcyn Shaft	Tuscarawas Co., OH	40,000

REGION IV

Acee Company Shaft	Sebastian Co., AR	\$ 15,000
Carter Open Shaft	Johnson Co., AR	15,000
Allen Open Shaft	Lucas Co., IA	10,000
Jones Open Shaft	Wapello Co., IA	30,000
Cedar Creek Mine Drainage	Callaway Co., MO	2,478,000
Nuewswander Slide	Henry Co., MO	30,000
*Keota Park Water Impoundment	Haskell Co., OK	25,000

REGION V

Scranton Mine Subsidence (Phase II)	Bowman Co., ND	\$ 230,000
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TOTAL—All Regions \$13,626,824

*1978 \$ 1,319,000
1979 \$12,307,824

Projects With Eligibility Determined but Scope of Work Not Developed

REGION III

M.E. Coal Inclined Shaft	Jackson Co., IL	\$ 25,000
Shipman Mine Open Shaft	Macoupin Co., IL	25,000
Superior #1 Open Shaft	Macoupin Co., IL	50,000

REGION IV

Jordano Highwall	Bates Co., MO	\$ 75,000
Woods-Wilson Highwall	Clark Co., MO	50,000
Phillips-Rasmussen Highwall	Randolph Co., MO	190,000
Lumsden Highwall	Hopkins Co., TX	60,000
Wallace Spoil Slides	Hopkins Co., TX	80,000

TOTAL—All Regions

\$ 555,000

*1978

NONE

1979

\$ 555,000

Projects Identified With No Other Action Taken

REGION I

Western City Park Slide	Allegany Co., MD	\$ 40,000
Amish Road Highwall	Garrett Co., MD	100,000
McCulloch Mine Drainage	Garrett Co., MD	50,000
Tablerock Strip Mine Highwall	Garrett Co., MD	100,000
W. Mifflin Mine Water Impoundment (Phase II)	Allegheny Co., PA	60,000
Cordek Sluiceway Subsidence	Cambria Co., PA	3,000
Gileot Mine Drainage	Jefferson Co., PA	115,000
Waddel Shaft	Luzerne Co., PA	20,000
Rebrook Mine Drainage Impoundment	Harrison Co., WV	400,000
Shinnston Underground Water Impoundment	Harrison Co., WV	200,000
Stonewood Anmoore Landslide	Harrison Co., WV	1,650,000
Carswell Refuse Pile	McDowell Co., WV	2,000,000
Warwood Mine Drainage Impoundment	Ohio Co., WV	2,000,000

Projects Identified With No Other Action Taken (Cont'd)

REGION II

Trafford Water Impoundment	Jefferson Co., AL	\$ 100,000
Brilliant Strip Mine Highwall	Marion Co., AL	200,000
Williams Branch Slides (Phase I)	Belle Co., KY	500,000
North Fork of Kentucky River	Floyd Co., KY	100,000
Spradlin Branch Slide	Floyd Co., KY	500,000
White City Flooding	Hopkins Co., KY	500,000
Stinking Creek Sedimentation	Knox Co., KY	500,000
Yellow Creek Sedimentation	Knox Co., KY	500,000
Clifford Sedimentation	Lawrence Co., KY	500,000
Lick Branch Sedimentation	Lawrence Co., KY	500,000
Mill Creek Slides	Lawrence Co., KY	500,000
Hurricane Branch of Kentucky River	Leslie Co., KY	50,000
Fleming-Neon Sedimentation	Letcher Co., KY	500,000
Emily Creek Sedimentation	Martin Co., KY	500,000
Little Laurel Creek Sedimentation	Martin Co., KY	500,000
Peter Cave Branch Sedimentation	Martin Co., KY	500,000
Rockhouse Fork Sedimentation	Martin Co., KY	500,000
Strafford Fork Sedimentation	Martin Co., KY	500,000
Trace Fork Sedimentation	Martin Co., KY	500,000
Barrenshee Sedimentation	Pike Co., KY	1,000,000
Big Creek Sedimentation	Pike Co., KY	500,000
Elkins Fork Sedimentation	Pike Co., KY	500,000
New Alma Sedimentation	Pike Co., KY	500,000
Peter Creek Sedimentation	Pike Co., KY	500,000
Taylor Fork Slide	Pike Co., KY	500,000
Hickory Creek Sedimentation	Campbell Co., TN	500,000
Tackett Creek Slide	Campbell Co., TN	100,000

REGION III

Glenns Run Slide	Belmont Co., OH	\$ 25,000
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TOTAL—All Regions \$18,813,000

*1978

1979

NONE
\$18,813,000

III-1 Initial Regulatory Program Support Grants and Permanent Regulatory Program Development Grants to States, Fiscal Years 1978 and 1979

State	State Funding (for State's Base Regula- tory Program ^{a)})	Initial Regulatory Program Support Grants		Permanent Regulatory Program Development Grants	
		OSM Grant FY 1978	OSM Grant FY 1979	OSM Grant FY 1978	OSM Grant FY 1979
Alabama	\$ 267,952	\$ 230,012	\$ 486,936	\$ —	\$ —
Alaska ^b	N.A.	—	—	—	—
Arizona ^c	N.A.	—	—	—	—
Arkansas	24,720	65,055	152,496	—	73,465
Colorado	77,784	42,281	254,069	71,007	264,395
Georgia ^d	—	—	—	—	—
Illinois	265,012	398,435	1,000,000	—	—
Indiana ^e	?	—	—	—	—
Iowa	53,902	44,599	83,310	20,000	8,600
Kansas	8,429	48,379	95,343	—	41,632
Kentucky	3,089,442	2,133,018	5,708,043	1,565,622	863,929
Louisiana ^c	N.A.	—	—	—	102,811
Maryland	185,063	158,640	122,412	—	395,560
Mississippi ^c	N.A.	—	—	—	116,244
Missouri	64,879	46,412	164,218	125,744	—
Montana	244,075	58,111	87,644	—	150,966
New Mexico	39,947	67,742	139,744	—	149,954
North Dakota	128,836	248,375	199,409	462,624	589,200
Ohio	762,056	370,541	1,500,000	—	—
Oklahoma	49,050	121,182	468,249	205,462	—
Pennsylvania	3,120,870	232,920	1,052,602	—	—
Tennessee	656,447	26,240	534,162	—	—
Texas	245,487	196,089	208,951	—	185,634
Utah	63,798	62,000	146,556	—	141,380
Virginia	748,254	626,155	786,490	285,989	71,497
Washington ^d	?	—	—	—	—
West Virginia	2,888,412	882,541	1,222,152	—	—
Wyoming	179,438	38,201	482,721	288,625	—
TOTAL OSM GRANTS TO STATES:		\$6,096,928	\$14,895,507	\$3,025,073	\$3,155,267

^a These figures reflect State funding of surface coal mining regulatory program before initial regulatory program performance standards took effect.

^b The Act requires a special study in Alaska to determine which provisions of the Act need modification before being applied in Alaska.

^c No current coal production.

^d State has indicated it does not want responsibility for surface coal mining regulation under permanent regulatory program.

^e Grants have not been applied for due to on-going litigation by State.

SMALL OPERATOR ASSISTANCE PROGRAM
GRANTS TO STATES—FY 1979

<i>State</i>	<i>Administration Grant</i>	<i>Operational Grant</i>
Alabama	\$125,000	\$873,000
Illinois	\$ 22,500	\$290,000
Kansas		\$ 48,000
Kentucky	\$231,654	\$8,146,000
Maryland	\$ 26,523	\$145,000
Ohio	\$ 97,065	\$699,000
Oklahoma		\$208,600
Virginia	\$ 62,275	\$925,000
West Virginia	\$111,947	\$582,000
TOTAL:	\$676,964	\$11,916,600

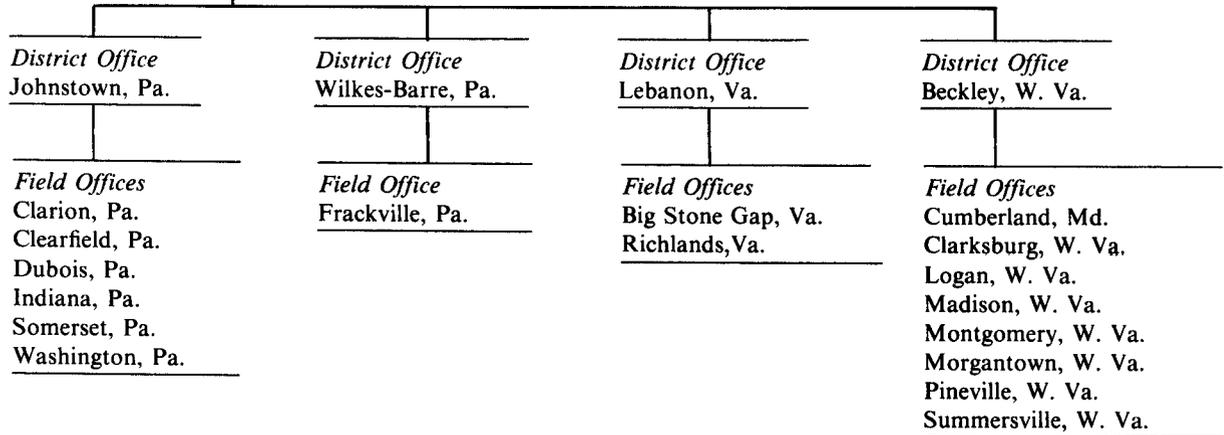
INSPECTION ACTIVITY SUMMARY FY 1979

<i>Region/State</i>	<i>Number of Inspections</i>	<i>Notices of Violation</i>	<i>Cessation Orders</i>	<i>Citizen Complaints</i>
REGION I				
Maryland	199	23	0	0
Pennsylvania	2178	406	41	162
Virginia	618	145	15	7
West Virginia	<u>3053</u>	<u>537</u>	<u>61</u>	<u>44</u>
Total	6048	1111	117	213
REGION II				
Alabama	734	176	56	30
Georgia	14	2	0	1
Kentucky	3473	823	186	203
Tennessee	<u>1064</u>	<u>284</u>	<u>159</u>	<u>49</u>
Total	5285	1285	401	283
REGION III				
Illinois	452	88	8	2
Indiana	576	135	20	24
Ohio	<u>751</u>	<u>272</u>	<u>25</u>	<u>19</u>
Total	1779	495	53	45
REGION IV				
Arkansas	73	10	6	0
Iowa	30	6	0	0
Kansas	74	10	0	5
Louisiana	3	0	0	0
Missouri	106	16	8	2
Oklahoma	283	45	12	2
Texas	<u>25</u>	<u>2</u>	<u>1</u>	<u>0</u>
Total	594	89	27	9
REGION V				
Arizona	0	0	0	0
Colorado	91	38	4	0
Montana	15	5	0	0
New Mexico	11	2	0	0
North Dakota	16	5	0	2
Oregon	1	0	0	0
Utah	46	8	0	2
Washington	4	0	0	0
Wyoming	<u>42</u>	<u>17</u>	<u>0</u>	<u>0</u>
Total	226	75	4	4
GRAND TOTAL	13,932	3,055	602	554

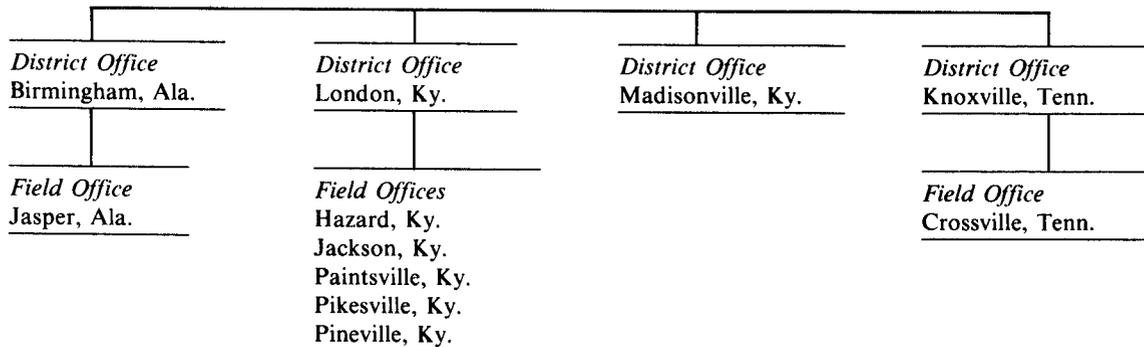
Office of Surface Mining Field Organization: Locations of Regional, District, and Field Offices as of September 30, 1979

WASHINGTON HEADQUARTERS—Washington, D.C.

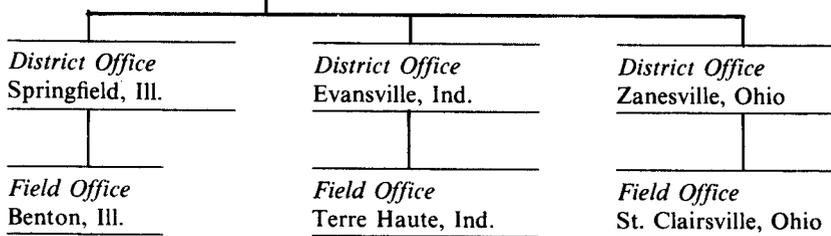
REGION I—Charleston, W. Va.



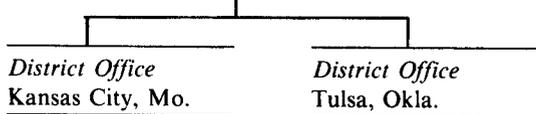
REGION II—Knoxville, Tenn.



REGION III—Indianapolis, Ind.



REGION IV—Kansas City, Mo.



REGION V—Denver, Colo.

IV-1 Fiscal Year 1979 Research Grants to State Mining and Mineral Resources and Research Institutes

<i>State</i>	<i>Mineral Institute</i>	<i>No. of Research Projects</i>	<i>OSM Grant</i>
Alabama	University of Alabama ^a	3	\$ 192,102
Alaska	University of Alaska, Fairbanks	1	59,637
Arizona	University of Arizona, Tucson	1	77,597
California	University of California, Berkeley	3	138,932
Colorado	Colorado School of Mines, Golden	3	124,626
Idaho	University of Idaho, Moscow	1	68,922
Illinois	Southern Illinois University, Carbondale	5	273,181
Kentucky	University of Kentucky, Lexington	4	195,013
Massachusetts	Massachusetts Institute of Technology, Cambridge	1	52,700
Michigan	Michigan Technological University ^a , Houghton	0 ^b	—0—
Minnesota	University of Minnesota, Minneapolis	1	100,573
Mississippi	University of Mississippi	1	54,857
Missouri	University of Missouri, Rolla	1	57,064
Montana	Montana College of Mineral Science and Technology	4	253,698
New Mexico	New Mexico Institute of Mining & Technology, Socorro	3	178,046
Ohio	Ohio State University, Columbus	5	261,983
Oklahoma	University of Oklahoma, Norman	2	55,037
Pennsylvania	Pennsylvania State University, State College	5	235,568
Texas	University of Texas, Austin	1	49,761
Utah	University of Utah, Salt Lake City	4	208,813
West Virginia	West Virginia University, Morgantown	1	80,080
Wyoming	University of Wyoming, Laramie	1	19,536
TOTALS		51	\$2,727,726

^a Designated a Mining and Mineral Resources and Research Institute in FY 1979; all others were designated in FY 1978.

^b Project was withdrawn by Mineral Institute.

**Office of Surface Mining (OSM) Funded Scholarships and Fellowships for
Academic Years 1978-79 and 1979-80 Combined**

DEGREE FIELDS	ACADEMIC LEVELS					
	Undergraduate		Graduate		Post-Doctoral	
	No of Recipients	Total Amount	No. of Recipients	Total Amount	No. of Recipients	Total Amount
Mining Engineering	68	54,374	30	164,120	3	43,000
Extractive Metallurgy	34	25,000	20	113,675	4	69,000
Ceramic (Process) Eng.	14	8,500	4	23,200	1	15,000
Mineral Processing	15	9,750	12	54,180	3	35,938
Petroleum Eng.	60	52,150	5	24,800		
Mineral Economics	1	1,000	15	60,500	1	9,000
Fuel Science	5	4,500	7	33,700	1	9,000
Geological Engineering	34	33,900	15	59,780	1	13,000
Geological Disciplines	19	17,600	18	81,927	1	24,000
Environmental Engineering	10	10,800				
Reclamation	4	8,000	7	53,314		
Environmental Disciplines	8	8,400	5	24,600		
Chemical Disciplines	3	3,000	4	16,800		
Mineral Sciences	15	11,000				
Mineral Law Research			2	6,500		
Agricultural Disciplines	7	No funds	6	2,500		
TOTAL:	297	24,797	150	719,596	15	217,938

GRAND TOTAL: 462 Scholarships in the amount of \$1,185,508

Topical Areas Funded For FY 1979 Research Grants

Topical Areas	No. of Pre-proposals Submitted	Proposed First Year Cost	Approximately 15% of the Total Submitted	First Year Cost
Exploration	66	\$ 3,247,824	13	\$ 683,486
Extraction	49	3,123,214	7	473,178
Processing	43	1,960,565	6	315,528
Mine Development	6	276,048	1	31,522
Mine Processing	4	189,779	1	35,648
Mining and Mineral Technology	32	1,672,463	5	328,876
Supply and Demand	13	799,714	1	58,000
Conservation and Best Use	20	1,001,319	3	131,834
Economic Legal and Social Aspects	38	2,397,677	3	137,877
Reclamation	70	3,462,683	6	307,027
Minerals Research	31	1,531,023	5	224,750
Totals	372	\$19,662,309	51	\$2,727,726

Highlights of the 1979 Fiscal Year for the Mining and Mineral Resources and Research Institutes

University of Alabama: The Director of the Mineral Institute joined with representatives of Kentucky, Missouri, Oklahoma, Mississippi and Texas, and OSM to discuss joint research interests in the various states. The Mineral Institute co-sponsored the Second Annual Mining Institute held April 11-13, 1979, and a two-day conference—Erosion Control and Revegetation for Surface Mining Operations—held on September 25-26, 1979.

University of Alaska: A conference on "Alaskan Placer Mining" with the emphasis on gold recovery systems was held April 3-4, 1979. The conference was an outstanding success with approximately 350 people in attendance. Ten research projects concerning mining problems unique to Alaska are under way.

University of Arizona: The Mine Reclamation Center was established as an integral unit of the Mineral Institute. The specific activity of the Mine Reclamation Center is to provide a focal point for interdisciplinary expertise on the University of Arizona campus that addresses the problems of mine reclamation in the Southwest. The Institute also participates in SEAMALERT which is a quarterly literature reporting service on mined-land reclamation literature and SEAMINFO which is a cumulative bibliographic data base of references to mined-land reclamation literature.

University of California-Berkeley: Effort has continued in planning and initiating mining and mineral engineering programs. Training and research programs are being directed towards three broad areas of mineral resources: (1) Exploration, (2) Mining and Extraction, and (3) Processing of mineral raw materials. A mini-computer system is being acquired. Subcommittees have been established to coordinate and advise the Director on the Institute's training and research activities.

Colorado School of Mines: One of the primary efforts of the Institute have been directed towards procedural assistance to the small mine operator in Colorado. Other studies are concentrating on seam-waves in coal and addressing other problems on coal policy issues and phasing of coal development.

University of Idaho: The Institute established a Research Review Board for seed-grant projects using grant allotment funds. A Landsman Program is being offered to provide training for prospective natural resource land surface managers (mineral lease managers). A geological engineer was added to the staff of the Institute.

Southern Illinois University, Carbondale: The operations of the Institute are designed to contribute to the education and training of students within Illinois and to draw upon the research capability of Illinois to contribute to a nationwide research program. The Institute is making progress towards the Statewide identification of research priorities for mining and mineral resources.

University of Kentucky: The Institute has accomplished major objectives in developing and disseminating information relative to reclamation. The Institute is co-sponsoring a symposium on Surface Mining Hydrology, Sedimentology, and Reclamation on December 4-7, 1979. Planned improvements to the equipment in the rock mechanics laboratory have been completed.

Massachusetts Institute of Technology: The Institute supports through the Library at M.I.T. a monthly publication, "Mining and Mineral Resources Newsletter", which contains information about the Minerals Resources collection at the Library. Funds are used to encourage and support the development of seminars on special topics. The research of several undergraduate students is supported as a result of a competition that was completed in the early part of the academic term.

Michigan Technological University: The Institute is using the funds to accomplish research in the areas of mine development and ventilation, coal processing, and iron ore beneficiation and analysis. Also student trips to iron and copper milling facilities were completed and a visiting speaker program on "Metallogeny" was a tremendous success.

University of Minnesota: A computer graphics system has been purchased to extend the training and research facilities of the Mining Technology Division. A new division of Process Technology has been established and includes a Plasma Technology Group working on novel metallurgy processes.

University of Mississippi: The Institute actively participates with the Directors of the Alabama, Kentucky, Texas, Missouri and Oklahoma Institutes in regular meetings on problems concerning the southern region of the United States. At the present time, work is progressing on a multi-stage research proposal to evaluate the energy, chemical, and economic potential of the southern lignites and to evaluate the environmental impact.

University of Missouri-Rolla: The Institute allocated all of its 301 funds to support five research projects which were selected by the Institute's steering committee. To assist the Institute's steering committee, a survey was completed of the industries in Missouri to prioritize ongoing research needs and to solicit recommendations for other research, experiments or demonstration projects judged to be a high priority need of industry.

Montana College of Mineral Science and Technology: The Institute developed a Small Mines Program jointly funded by the Montana Bureau of Mines and Geology. The program seeks to identify the problems of "small" mine operators, and organize specific research and training projects to solve their problems. The Institute sponsored conferences and workshops on Early High Strength Mine Backfills, Mine Ventilation Design and Placer Mining which were quite successful.

New Mexico Institute of Mining and Technology: The activities were directed towards purchasing urgently needed equipment to improve the quality of certain mineral oriented activities or to create new activities. The Geological and Petroleum Engineering Department hired a professor for teaching and research earlier than anticipated with the Mineral Institute funds.

Ohio State University: An Initiation Grants Program was sponsored to provide small grants to stimulate and encourage research in the mining and mineral resources area. The competition for these grants was Statewide and three proposals were funded. In the fields of minerals and mining, seminars were presented in July. A visiting professor, recently hired, will be with the Institute for a one to two-year period.

University of Oklahoma: The Oklahoma Mining and Mineral Resources Research Institute has helped focus teaching and research activities of several departments on mineral science and mineral engineering. Emphasis of the research programs has been on coal, petroleum, tar sands, and construction materials in metropolitan areas, with additional studies being conducted in other mineral research areas. Major equipment purchases include a plasmaemission spectrometer for research on coal and petroleum.

Pennsylvania State University: Research and instructional programs in Mining Engineering are being expanded and strengthened. A new program of research oriented training for advanced undergraduate students has been provided. An addition was made to the faculty of the Mineral Processing Section.

University of Texas at Austin: The first year of the Institute was one of consolidation and organization. Priority areas for research and training were selected. These research areas are: Shallow lignite resources, Deep-basin lignite resources, Resource economics and Texas non-fuel minerals. Laboratory exercises were developed for the Economic Geology courses.

University of Utah: The Institute is in new space provided by the University of Utah. The Department of Metallurgy and Metallurgical Engineering has employed Dr. Megura Nagamori, an international expert in high temperature thermodynamics, who will be with the Institute 20 percent of his time. A dedicated computer for the mining ventilation laboratory will soon be operational and interface with the main campus computer system.

West Virginia University: The goal chosen by the Institute was to provide a comprehensive research and training program on the surface effects of mining in West Virginia and in the Appalachian Region. To focus on this goal, research projects were selected in the areas of extraction, reclamation, pollution and its control, and impact assessment.

University of Wyoming: Students receiving undergraduate scholarships are studying at five community colleges located across the State of Wyoming and at the University of Wyoming. A visiting professor from West Germany conducted courses and seminars on process control for graduate and undergraduate students. The allotment grant monies are being used as seed money for several research areas at the Institute.