

# **ANNUAL REPORT 1981**

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

Public Law 95-87

## **OFFICE OF SURFACE MINING**



# U. S. Department of the Interior

James G. Watt, Secretary

Donald Paul Hodel, Under Secretary

Daniel Miller, Assistant Secretary  
Energy and Minerals

## Office of Surface Mining

James R. Harris, Director

J. Steven Griles, Deputy Director

Carson W. Culp, Assistant Director  
Management and Budget

William Schmidt, Assistant Director  
Program Operations and Inspection

Dean Hunt, Assistant Director  
Technical Standards and Research





# United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

To the President of the United States:

To the Congress of the United States:

I am gratified to be able to send you the attached 1981 Annual Report outlining the accomplishments of the Office of Surface Mining during the last fiscal year as required by the Surface Mining Control and Reclamation Act of 1977 (Public Law 95-87).

The year produced the first efforts to revise the OSM organization and to provide sound, sensible solutions for the states, mining operators, and federal government to work together to make an important energy source available for the country.

Although these efforts will result in vast savings, the impact is directed toward providing more services to more people and increasing the overall efficiency of the organization. The new management concepts also offer greater assistance in the major coal-producing areas and provide the states with a realistic opportunity to meet the surface mining act's major requirements.

JAMES G. WATT  
SECRETARY



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# EXECUTIVE SUMMARY

Four years ago Congress passed landmark legislation -- the Surface Mining Control and Reclamation Act -- to ensure that the nation's increased use of coal would not result in unnecessary degradation of its land and water resources. The Office of Surface Mining's (OSM) commitment to that goal remains firm.

## Changing Requirements

In essence, Congress granted the stewardship of coal-producing lands to the states and gave them the opportunity and financial assistance to run programs that would make the environmental performance standards of the act a reality. However, the "state lead" concept was severely altered by a policy which frustrated good faith efforts by states to build regulatory programs, tailored to their unique terrain, climates, mining methods, and physical features.

This strategy was costly to the surface mining act's implementation. State programs mirrored federal regulations; many legal suits and one legislative attempt to change the act followed; and a loss of credibility with state legislatures and the coal industry became hallmarks of the federal surface mining program conducted from 1977 to 1980. More important, the states' task to reclaim millions of acres of lands and waters disturbed by past mining practices barely got underway.

In January 1981, Secretary James Watt launched sweeping initiatives to re-direct the Office of Surface Mining's policies so they would be consistent with the spirit and intent of the act.

In the past year, OSM's new management team successfully fulfilled these initiatives. OSM has, in fact, now faithfully executed Congress' intent to create balance among environmental protection and agricultural productivity and the mining of coal.

During fiscal year 1981, OSM took action to have states assume the many responsibilities associated with the surface mining act. Such action better reflected administration efforts to have all federal agencies change from a centralized layered control to control by the states where the actual problems, activities, and solutions exist.

## The First Steps

For more than 50 years the federal government had grown out of proportion and out of touch with the needs and desires of the grassroots population and become a ponderous burden. Excessive centralized power, regulations and paperwork were even detrimental to the most worthwhile programs. These problems existed in our environmental programs. Because they came late in the centralization and regulatory movement, they acquired many of the worst excesses and led to the abuses which prompted the demand for a change.

To develop a new approach, OSM reviewed the basic philosophies related to its operations. The study analyzed the organizational structure which was spread over a vast regional network, the gaps between federal and state requirements, and many of the regulations which were impractical for realistic field situations.

## Reducing Regulatory Restrictions

Too often, reasonable intentions by the federal government to balance environmental and economic values require many administrative junctions. Clearly, regulations must be geared to improving results and productivity to be effective. Thus, OSM's first major initiative was to review and revise all burdensome regulations under the guidelines of the President's regulatory reform program. Stressing performance rather than design standards that will lead to better reclamation and meet local conditions, OSM has:

- met with coal-producing states and is conducting an ongoing review of more than 40 rules;
- proposed the revision of many rules, some of which are final, including the critical rule which allows each coal-producing state to tailor its regulations according to particular needs and still meet the act's purpose; and
- worked diligently to complete regulatory reform efforts by fall of 1982.

## Program Funding

Reclamation and enforcement efforts by the states could not proceed without the act's funding program. During fiscal year 1981, OSM:

- made available \$27.7 million in federal grants to the states which, added to the \$94.2 million from past funding, will increase state inspectors to about 600 nationwide in fiscal year 1982 and will help states develop and eventually run their own regulatory programs;
- approved reclamation plans enabling the states to contract for \$4.6 million in reclamation projects; \$16.9 million was spent on federal projects to abate emergency and priority abandoned mine land problems; and
- helped over 420 small coal mine operators obtain the hydrologic and geologic information necessary to submit mine permits by awarding \$10.5 million to qualified laboratories.

## Returning States To Their Rightful Role

The elimination of excessive regulations is a necessary action to achieve OSM's major objective -- state primacy. And, although sixteen states had received primacy in January 1981, eight pivotal coal-producing states had not, because the submission of each program was enjoined by state courts.

The cause of this stalemate has been various states' distrust of OSM's heavy-handed approach to the regulatory scheme and the state program approval process. However, major efforts were taken to restore OSM's credibility, and they included:

- meetings with governors and other elected officials at the state and local levels;
- working closely with Pennsylvania, Kentucky, Tennessee, Oklahoma, Ohio, Indiana, Alabama, and Illinois so that all can receive primacy by mid-1982.
- initiating a study to evaluate the efficiency of the Abandoned Mine Land fund delivery systems.



## **Efficiency And Economy**

When complete, a cumbersome five-region operation will be replaced with a flexible network of thirteen state liaison offices -- close to state capitals -- and two technical centers in the nation's major coal regions. Each will provide closer working relationships with regulatory agencies. All this involves the gradual reduction -- mostly through attrition -- of a permanent staff of 891 in October 1980, to 772 in September 1981. These employees will assist the states and Indian tribes in their reclamation and enforcement efforts.

During the year OSM continued to work closely with the states and special interest groups to develop oversight strategy not only to meet the agency's obligations under the law, but also to be responsive to the states' individual needs and concerns. Whenever deficiencies in the state programs were identified, OSM provided assistance to the states to help them solve the problems.

Through these actions, OSM not only met its internal goals during 1981, but achieved the objectives established by the administration to provide greater state participation in regulatory activities.



# PROGRAM MANAGEMENT & BUDGET

During the year many changes were initiated which were based on creating an organization designed to meet the new requirements fostered by shifting program control to the states.

The intent and purpose of the Surface Mining Control and Reclamation Act focuses on the states' developing and administering regulatory requirements tailored to regional or environmental individual needs with the Office of Surface Mining assisting and cooperating. OSM has established a complementary state-federal relationship with the states in developing and operating regulatory programs.

Using the act and the new principles of government outlined above as guides, OSM had to reverse the state-OSM roles. Activities concentrated in three areas: (1) establishing a new working relationship with the states, (2) developing flexibility in the OSM regulations, and (3) revising the OSM organization and staff to reflect the new roles.

Working with the states, OSM gave the concept of state-specific regulations more emphasis. Regulations written at the national level cannot reflect all the different conditions which states must face. Accordingly, the agency has been and is revising the federal regulations to give states the maximum flexibility consistent with the act.

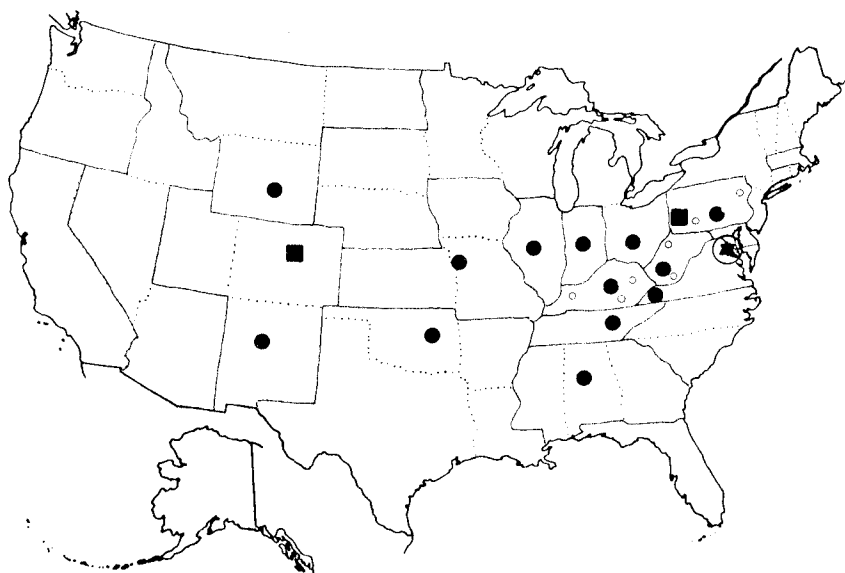
To make these changes work, organizational revisions were also required. Relying on the states to regulate, OSM's role shifts to oversight and assistance activities. The old structure of regional, district, and field offices was oriented primarily towards direct OSM enforcement. To reflect the new role, OSM established a new network of 13 state offices which are located and staffed to provide monitoring and support to the states. A few field offices to house the oversight staff will be maintained close to the mines in those states with large numbers of facilities. Two technical centers will be located in Denver and Pittsburgh to provide engineering and other technical assistance. This will concentrate a much greater array of technical experts in two offices, which serve many states, than in the state offices, which serve only a few states. The total number of OSM field offices will be reduced from 42 to 22.

During the fiscal year, OSM's budget was slightly over \$166 million, which was about \$13 million lower than the previous year. More than \$14 million of this total represented executive direction and general administration funds with the remainder devoted to the state regulatory grants, state and federal programs, Mineral Institutes Program, state and federal reclamation operations, the Small Operator Assistance Program, and the Rural Abandoned Mine Reclamation Fund.

Because of the unobligated balance of approximately \$400 million dollars in the Abandoned Mine Land fund and the existence of four different funding mechanisms, a study was initiated to evaluate these mechanisms. The objective was to improve, if possible, the efficiency of funding states to meet their priority needs and for improved control of reclamation activities within a state.

Under the former regional concept, which existed during fiscal year 1981, OSM had 226 people in the Washington office and 546 individuals in the regional, state, district, and field offices. During this time period, OSM was actually authorized 1,036 positions but only had 772 persons on September 30, 1981, due to the hiring freeze which existed during the fiscal year and the impending shutdown of the regional, state, district, and field offices.

# Proposed Field Structure



★ HEADQUARTERS

Washington, D.C.

● STATE OFFICES

Casper, Wyoming

Alaska  
Montana  
North Dakota  
Oregon  
Washington  
Wyoming

Albuquerque, New Mexico  
California  
Colorado  
New Mexico  
Utah

Tulsa, Oklahoma  
Arkansas  
Louisiana  
Oklahoma  
Texas

Kansas City, Missouri  
Iowa  
Kansas  
Missouri

Springfield, Illinois  
Illinois  
Indianapolis, Indiana  
Indiana

Columbus, Ohio  
Ohio

Lexington, Kentucky  
Kentucky

Knoxville, Tennessee  
Tennessee

Birmingham, Alabama  
Alabama  
Georgia  
Mississippi

Charleston, West Virginia  
Maryland  
West Virginia

Harrisburg, Pennsylvania  
Pennsylvania  
Massachusetts

Big Stone Gap, Virginia  
Virginia

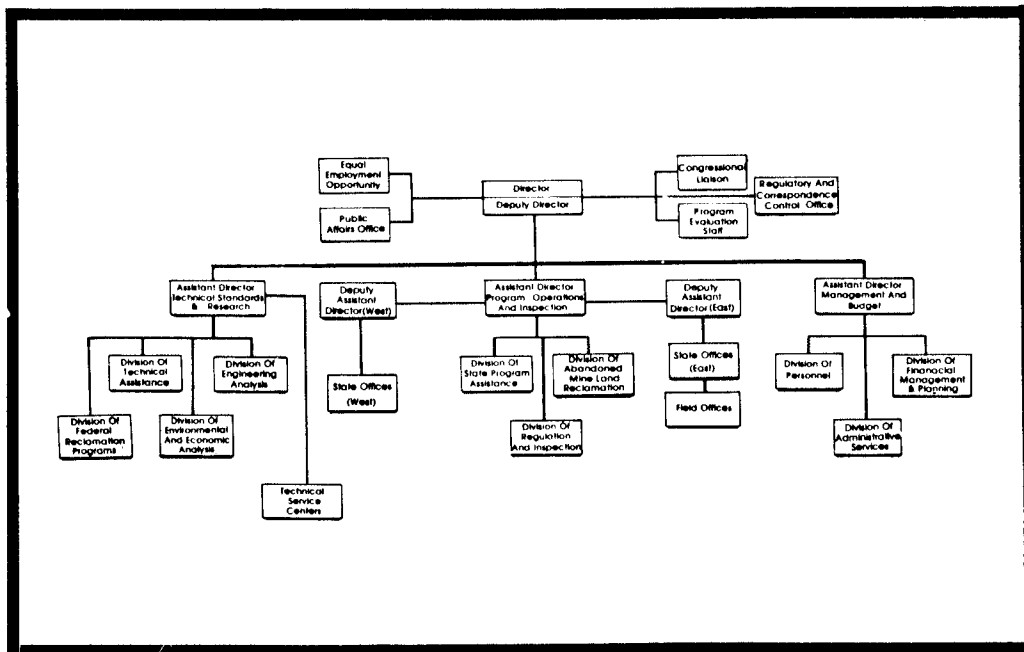
■ TECHNICAL CENTERS

Pittsburgh, Pennsylvania: Eastern Technical Center  
Denver, Colorado: Western Technical Center

○ FIELD OFFICES

Madisonville, Kentucky  
London, Kentucky  
Pikeville, Kentucky  
Beckley, West Virginia  
Morgantown, West Virginia  
Johnstown, Pennsylvania  
Wilkes-Barre, Pennsylvania

## Organization (as of Sept. 30, 1981)



Calendar year 1981 brought an increased management focus on the importance of avoiding financial interest situations which are, or may be construed to be, in conflict with the mission and goals of the Office of Surface Mining. Attention centered on two objectives: first, to better inform employees of statutory and regulatory prohibitions against holding interests in coal mining operations; and, second, to restructure the conflict of interest program to facilitate that awareness.

## Conflict of Interest

Through diligent monitoring of employees' financial statements and, particularly, through daily conversations with OSM staff concerning the appropriateness of land, stock or other financial interests related to coal operations, a better understanding of the act's prohibitions has been nurtured. Internal shifts within the agency have personalized the conflict of interest program to aid in responsiveness to employee questions. The often complex nature of possible conflict situations requires time consuming reviews, although efforts in 1981 to more fully inform staff of prohibited holdings will perhaps decrease the necessity for as many reviews in the coming years. Only one divestiture order was issued in 1981, resulting in favorable resolution of the conflict.

With continued management attention and increasing awareness on the part of employees to the statutory prohibitions concerning financial interests in coal mining operations, the Office of Surface Mining will effectively monitor and prevent conflicts of interest.

# Budget

(Appropriations In  
Thousands Of Dollars)

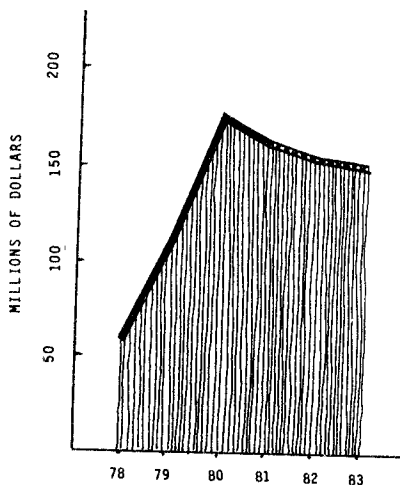
ACTIVITY	APPROPRIATIONS (IN THOUSANDS)		
	FY 1981 (ACTUAL)	FY 1982 (ACTUAL)	FY 1983 (ESTIMATE)
<b>REGULATION AND TECHNOLOGY</b>			
State Regulatory Program Grants Federal Regulatory Programs	\$29,200	\$24,432	\$33,400
Program Operations and Inspection		27,448 *	9,393*
State and Federal Programs	22,492	(15,257)	-----
Inspection and Enforcement	15,717	(12,191)	-----
Technical Support	6,841	6,635	9,760
Mineral Institutes	9,629	-----	-----
Executive Direction and General Administration	(10,345)	(8,506)	9,620**
Total Requirements--Regulation and Technology	83,879	58,515	62,173
<b>ABANDONED MINE LAND FUND</b>			
State Reclamation Program Grants	29,000	59,136 ***	78,500
Federal Reclamation Programs			
Fund Management	5,383	6,794	4,901
Interior Reclamation Projects	31,170	29,480***	9,377
Technical Support	1,652	1,584	1,221
Rural Abandoned Mine Program	10,280	5,088	3,650
Small Operator Assistance	5,000	-----	-----
Executive Direction and General Administration	(3,945)	(3,960)	-----***
Total AML Fund Requirements	82,485	102,082	97,649
Total, Office of Surface Mining	\$166,364	\$160,597	\$159,822

\*Includes functions under "State and Federal Programs" and "Inspection and Enforcement" in Fiscal Year 1981 and 1982.

\*\*Includes personnel financing under "Executive Direction and Administration (Common Program Services)" in Fiscal Years 1981 and 1982. In Fiscal Year 1983, in General Administration includes headquarters personnel only.

\*\*\*Executive Direction and General Administration is shown under the regulation and technology appropriation.

\*\*\*\* \$ 15 million was subsequently reprogrammed from state AML to federal AML.

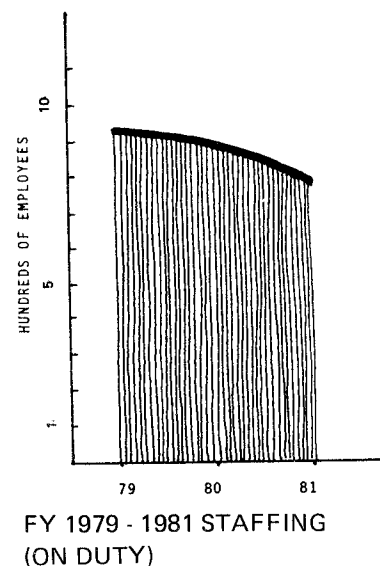


FY 1978-1983 APPROPRIATIONS



# Staffing (as of Sept. 30, 1981)

PERMANENT FULLTIME POSITIONS BY LOCATION	AUTHORIZED POSITIONS	ON DUTY	VACANCIES
Washington, D.C.	304*	226	78
Region I	185	154	31
Region II	196	150	46
Region III	120	92	28
Region IV	90	71	19
Region V	141	79	62
TOTAL	1,036	772	264***
EMPLOYMENT CEILINGS			
Permanent **	933	772	161
Permanent Part-Time	105	60	45
Temporary	70	70	0
TOTAL	1,108	902	206***
<p>*Excludes 26 positions allocated the U.S. Bureau of Mines for OSM accounting support</p> <p>**The difference between authorized positions and employment ceiling is the expected number of vacancies at the end of the fiscal year, due to an employee turnover, recruiting time, etc.</p> <p>***During Fiscal Year 1981, a limitation on hiring or an hiring freeze was imposed. These were necessary to reduce to fullest extent possible the adverse impact resulting from a reorganization and a reduced total work force.</p>			





# REGULATORY REFORM

This past year has been one of change for OSM in its approach to carrying out the regulatory responsibilities expressed in the act. This new approach calls for greater emphasis on the performance standards by eliminating unnecessary design criteria and for an increase in flexibility to better accommodate specific environmental circumstances by allowing application of innovative technology. In addition, the rules will be simplified and excessive and duplicative requirements removed.

By midyear, a review of the entire set of surface coal mining rules in Chapter VII, Title 30, Code of Federal Regulations, had been initiated. OSM maintained a heavy schedule of meetings and sought opinions on its regulatory reform effort from the states, industry, environmental groups, and other interested parties. Technical specialists of various disciplines were brought in from OSM field offices to assist with the organization of the review effort and the development of a consensus on the direction of the regulatory reform. Because of this review, many of the rules already in the rulemaking process were withdrawn in order to integrate them with proposed changes envisioned by the administration.

To incorporate all information, comments and review papers into formal rule proposals, a task force will be formed. The task force will pull together all the drafts and comments, prepare proposed and final rules for publication in the Federal Register, and coordinate all Office of Management and Budget requirements and U.S. Department of the Interior approval procedures. The following table identifies those subjects by section numbers that are targeted for revision.

# Proposed Regulatory Reform

SUBJECT	NUMBER OF PROPOSED SECTION CHANGES			
	DELETED	REVISED	SECTIONS COMBINED WITH ANOTHER SECTION	NEW SECTIONS
ABANDONED MINE LANDS	14	39	2	11
ALLUVIAL VALLEY FLOORS	2	2	0	0
ANTHRACITE	0	1	0	0
AUGER MINING	0	1	0	0
BACKFILLING AND GRADING	1	10	3	0
BLASTER CERTIFICATION	0	8	0	0
COAL EXPLORATION	2	7	7	0
COAL MINE WASTE	0	14	6	0
COAL PROCESSING PLANTS	0	2	0	0
DEFINITIONS	0	39	0	0
DISPOSAL OF EXCESS SPOIL	1	13	9	0
EFFLUENT LIMITATIONS	0	4	0	0
EROSION AND AIR POLLUTION	2	2	0	0
EXPERIMENTAL PRACTICES	0	1	0	0
FISH AND WILDLIFE	0	4	0	0
HYDROLOGY	0	0	16	0
IMPOUNDMENTS	0	4	0	0
INSPECTION AND ENFORCEMENT	0	35	0	0
IN SITU PROCESSING	2	2	0	0

SUBJECT	NUMBER OF PROPOSED SECTION CHANGES			
	DELETED	REVISED	SECTIONS COMBINED WITH ANOTHER SECTION	NEW SECTIONS
PERFORMANCE BONDING	0	15	0	0
PERMITTING PROCESS	2	46	55	0
PRIME FARMLANDS	2	3	4	0
POSTMINING LAND USE	0	3	1	0
REGULATORY PROGRAM MODIFICATION	0	1	0	0
REMINING	0	0	0	1
REVEGETATION	6	8	0	0
ROADS	28	17	0	0
SECOND CUT REMINING	0	1	0	0
SMALL OPERATOR ASSISTANCE PROGRAM	0	1	0	0
STATE LANDS UNSUITABLE	6	10	1	0
STATE PROGRAMS	8	15	2	0
STATE WINDOW	1	3	0	0
SUBSIDENCE/CONCURRENT MINING	6	4	4	0
SUPPORT FACILITIES	0	0	1	0
SUSPENSION OF SELF BONDING	2	0	0	0
TOPSOIL	2	6	0	0
USE OF EXPLOSIVES	0	3	0	0
TOTAL	89	329	112	12

Proposed Regulatory  
Reform  
-continued-





# STATE REGULATORY PROGRAMS

On March 13, 1979, OSM issued the permanent program rules required by the act. In order for a state to assume jurisdiction over the regulation of surface mining and reclamation operations within the state, the act requires that it submit to the Secretary of the Interior a permanent regulatory program that is consistent with the act and with the regulatory program established by OSM.

## Permanent Regulatory Program

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

## State Programs

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

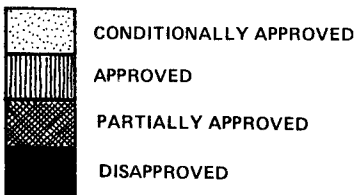
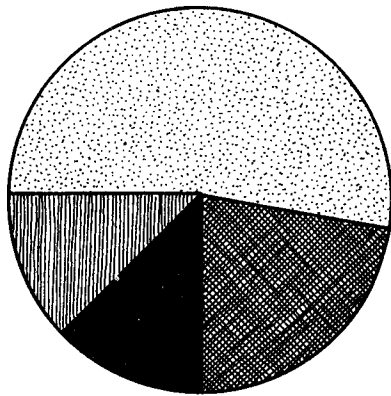
However, under Section 503(d) of the act, if a state's action to resubmit its program or to enforce its approved program is enjoined by state court injunction, a permanent federal program cannot be imposed on the state for the duration of the injunction or for one year, whichever is less, during which time the initial program requirements established under Section 502 are enforced.

Of the 24 state programs submitted, 16 were approved or conditionally approved during 1980 and 1981. Resubmissions of programs by eight states were enjoined by court injunctions.

OSM assisted the states during the development of their initial and permanent regulatory programs, both with guidance and with grants to partially cover the cost of developing or revising laws, regulations, and procedures. In 1981, nine states received a total of \$17,043,203 for initial program support and four states received \$1,355,583 for development of their permanent programs. Additional grants totalling \$9,307,448 were made to 15 states for development, administration, and enforcement of their permanent programs.

# Status Of State Programs

(as of Sept. 30, 1981)



STATE	APPROVED	CONDITIONALLY APPROVED	PARTIALLY APPROVED	DISAPPROVED
ALABAMA				
ARIZONA*				
ARKANSAS				
COLORADO				
GEORGIA**				
ILLINOIS				
INDIANA				
IOWA				
KANSAS				
KENTUCKY				
LOUISIANA				
MARYLAND				
MISSISSIPPI				
MISSOURI				
MONTANA				
NEW MEXICO				
NORTH DAKOTA				
OHIO				
OKLAHOMA				
PENNSYLVANIA				
TENNESSEE				
TEXAS				
UTAH				
VIRGINIA				
WASHINGTON**				
WEST VIRGINIA				
WYOMING				
TOTAL	3	13	5	3

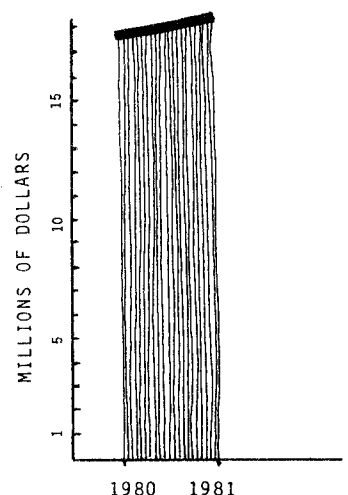
\* No mining on non-Indian lands  
 \*\* State elected not to submit a program

# Program Grants To States (in dollars)

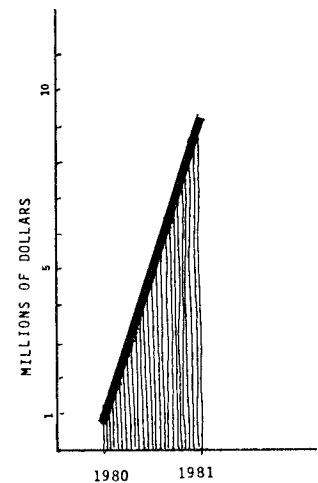
STATE	INITIAL REGULATORY PROGRAM GRANTS		PROGRAM DEVELOPMENT GRANTS		TOTAL RECEIVED
	FY 1980	FY 1981	FY 1980	FY 1981	
ALABAMA	726,436	646,940			1,373,376
ALASKA			100,000	1,070,000	1,170,000
ARIZONA*					
ARKANSAS	198,971				198,971
COLORADO	366,447				366,447
GEORGIA**					
ILLINOIS	1,638,134	1,134,792			2,772,926
INDIANA		900,000			900,000
IOWA		22,229	22,500		44,729
KANSAS	174,734		4,800		179,534
KENTUCKY	3,884,191	4,370,676	240,000	27,500	8,522,367
LOUISIANA					
MARYLAND	142,751				142,751
MISSISSIPPI					
MISSOURI	494,925				494,925
MONTANA	106,509				106,509
NEW MEXICO	303,681		99,235		402,916
NORTH DAKOTA	124,074		172,518		296,592
OHIO	1,029,093	2,471,673			3,500,766
OKLAHOMA	379,478				379,478
PENNSYLVANIA	2,611,075	4,362,766			6,973,841
RHODE ISLAND				153,083	153,083
TENNESSEE	422,200	336,900			759,100
TEXAS					
UTAH	272,457		31,007		303,464
VIRGINIA	2,107,137	2,797,227		105,000	5,009,364
WASHINGTON**					
WEST VIRGINIA	1,830,444				1,830,444
WYOMING			251,254		251,254
TOTAL	16,812,737	17,043,203	921,314	1,355,583	36,132,837

\*No mining on non-Indian lands

\*\*State elected not to submit a program



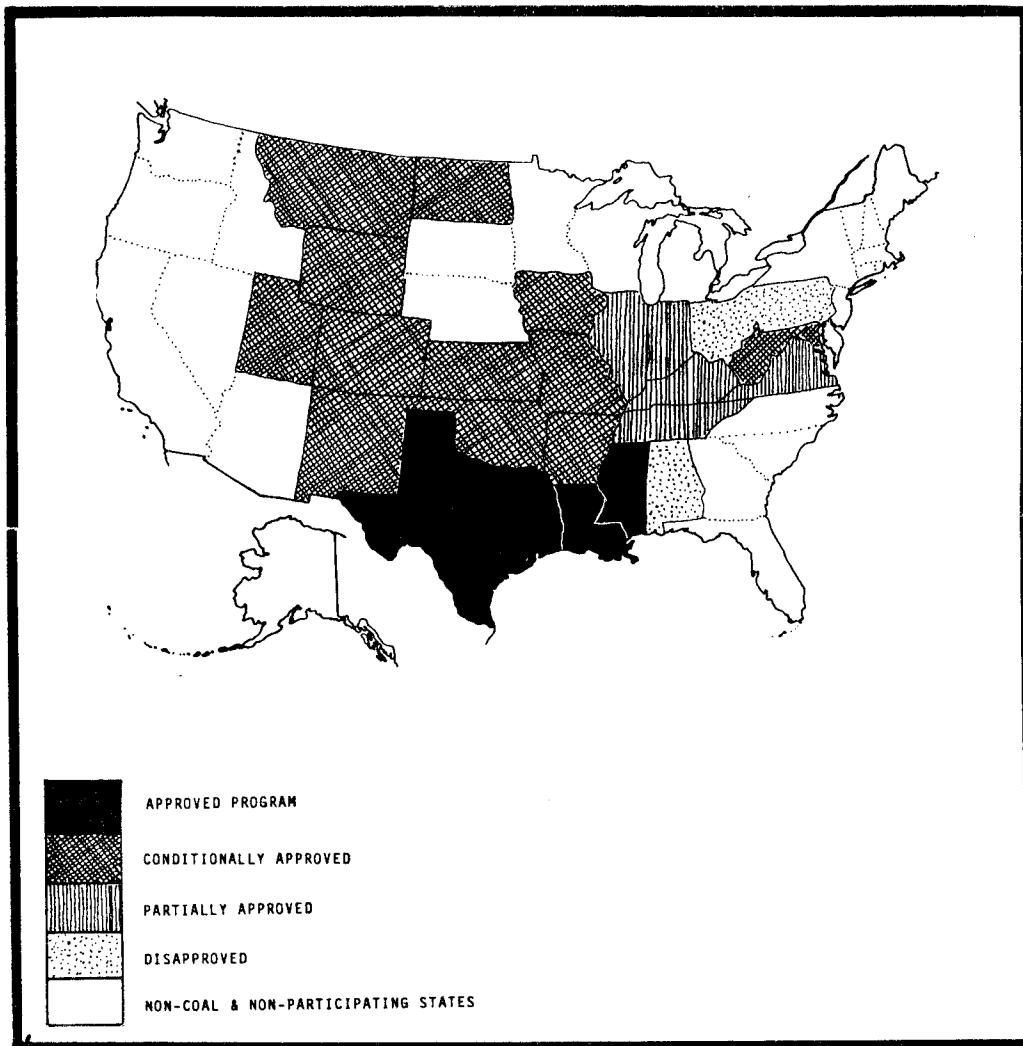
**Regulatory Grants To  
The States Under The  
Permanent Program  
(Permanent Program  
Support)**



FY DOLLAR TOTALS

STATE	FY 1980	FY 1981
ALABAMA	--	--
ALASKA	--	--
ARIZONA*	--	--
ARKANSAS	--	\$ 221,912
COLORADO	--	268,460
GEORGIA**	--	--
ILLINOIS	--	--
INDIANA	--	--
IOWA	--	38,501
KANSAS	--	173,784
KENTUCKY	--	--
LOUISIANA	--	127,569
MARYLAND	--	423,499
MISSISSIPPI	--	42,370
MISSOURI	--	395,078
MONTANA	\$ 682,383	765,272
NEW MEXICO	--	417,741
NORTH DAKOTA	--	300,571
OHIO	--	--
OKLAHOMA	--	247,709
PENNSYLVANIA	--	--
RHODE ISLAND	--	--
TENNESSEE	--	--
TEXAS	305,623	361,907
UTAH	--	--
VIRGINIA	--	--
WASHINGTON**	--	--
WEST VIRGINIA	--	4,275,277
WYOMING	--	1,247,798
TOTAL	\$ 988,006	\$ 9,307,448
*No mining on non-Indian lands **State elected not to submit a program		

## State Programs (as of Sept. 30, 1981)



## Anthracite Mining

Section 529 of the act provides special environmental protection standards for anthracite coal mining operations. To qualify for this provision states must have had established laws for anthracite mines in effect on August 3, 1977. Pennsylvania was the only state with established anthracite mining rules and regulations at that date. Therefore, anthracite mining operations in Pennsylvania must comply with the environmental protection standards contained in these Pennsylvania statutes instead of the standards required by the Office of Surface Mining permanent program regulations.

In calendar year 1981, 1,035 state inspections were conducted on anthracite surface mining operations. A total of 104 violations, involving 47 companies were issued and \$46,800 in penalties were paid to the state.

The Pennsylvania program has not been approved. However, OSM is working with the state and anticipates approval in the near future. The approved Pennsylvania state program will include the special anthracite mining provisions.





# FEDERAL PROGRAMS

OSM is required to regulate surface coal mining and reclamation activities on non-federal and non-Indian lands in a state if:

- the state's proposal for a permanent regulatory program receives final disapproval from the Secretary of the Interior;
- the state does not submit its own permanent regulatory program; or
- the state fails to implement, enforce, or maintain its approved state program.

OSM encourages and supports the primacy of states in the regulation of surface coal mining and reclamation operations within their borders. Three states with active mining--Georgia, Alaska, and Washington--did not submit regulatory programs. Alaska is now preparing its state program for submission. Federal programs for Washington state and Georgia are being developed.

In addition, full federal programs for Arizona, California, Idaho, Massachusetts, Michigan, Nebraska, Nevada, North Carolina, Oregon, Rhode Island and South Dakota are being prepared. These states all have coal reserves and therefore the potential for mining. In the interim, federal coal exploration programs are being issued for Massachusetts, Michigan, Oregon and Rhode Island.

Section 523(a) of the surface mining act requires the secretary to issue and implement a federal lands program applicable to all surface coal mining and reclamation operations taking place on federal lands. The secretary issued regulations implementing the initial phase of the program on August 22, 1978, and the permanent phase of the program on March 13, 1979. During 1981, OSM initiated efforts to amend the permanent federal lands program rules in order to more clearly delineate the roles of the federal government and the states in the regulation of surface coal mining and reclamation operations on federal lands. The amendment would enable states to assume greater responsibility for regulation of mining on federal lands.

The federal lands programs is important because the federal government owns significant coal resources in Colorado, Montana, New Mexico, North Dakota, Utah, Wyoming, and throughout the west. Of the 200 billion tons of identified coal reserves in that region, 80 percent is federally owned or cannot be developed without issuance of a federal coal lease under the federal coal management program.

OSM's major responsibility in the federal coal management program, in addition to reclamation and enforcement activities, is to provide assistance to the Bureau of Land Management (BLM) in the federal coal leasing program. OSM involvement in the federal coal leasing program is reflected in a memorandum of understanding (MOU) that defines the cooperative effort among OSM, U.S. Geological Survey, and BLM. The MOU also establishes procedures by which the three agencies carry out functions and responsibilities for federal preleasing activities and for the regulation of operations under federal coal leases and exploration licenses.

## Federal Programs

## Federal Lands Program

Preleasing activities in the west have vital significance since the bulk of federal reserves is in that region. The cooperative effort attempts to reduce the amount of work by providing information in advance so that site-specific analysis of proposed leasing tracts, consultation among agencies, and review of pre-leasing stipulations can shorten the leasing process.

OSM participated in the program through the regional coal teams established by BLM. These teams are made up of BLM, state directors, and governors' representatives. Representatives of federal agencies including U.S. Geological Survey, U.S. Forest Service, OSM, Fish and Wildlife Service, and the National Park Service are ex-officio members.

## Federal Lands Mine Plan Review Status (as of Sept. 30, 1981)

STATES	FY 1981								
	PLANS CARRIED OVER FROM 1980	PLANS SUBMITTED	PLANS FOUND COMPLETE	PLANS FOUND INCOMPLETE	TECHNICAL ANALYSIS COMPLETE	ENVIRONMENTAL ANALYSIS COMPLETE	EIS COMPLETE	PLANS APPROVED	PLANS PENDING
COLORADO	11	17	23	2	6	6	0	6	20
OKLAHOMA	1	1	0	0	0	0	0	0	2
MONTANA	2	8	2	6	2	2	0	0	2
NEW MEXICO	3	0	1	0	1	1	0	1	2
NORTH DAKOTA	2	2	2	2	1	1	0	1	1
UTAH	14	15	4	15	1	1	0	1	13
WYOMING	13	15	4	16	3	2	1	3	9
TOTAL	46	58	37	41	14	13	1	14	49



APPROVED PLANS

## Mine Plan Review

During 1981, OSM participated in the review of mining and reclamation plans for coal mining on federal lands to determine compliance with requirements of the Mineral Leasing Act of 1920, as amended, the environmental performance standards of the Surface Mining Control and Reclamation Act, and the requirements of the National Environmental Policy Act (NEPA). OSM, in coordination with state and other federal agencies, must address the effects of mining before a plan may be approved.

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

Wyoming, Montana, Utah, Colorado, New Mexico and North Dakota together account for 98.5 percent of all production on federal lands, with Wyoming alone producing 55 percent of the total.

Surface coal mining and reclamation techniques in the West are quite different than those in the East. A typical western mine covers about 4,000 acres and may be worked for as long as 35 years. This means the overall environmental impact extends over a long time period. Western land revegetation also presents special problems due to the limited rainfall. Almost all western mining occurs in dry climates where the annual average precipitation is less than 26 inches. In the Four Corners area, where Utah, Arizona, New Mexico and Colorado meet, the annual rainfall averages four inches which prevents rapid revegetation growth and means western regulations can not be as rigid as those in the eastern coal regions. OSM anticipates that despite these differences coal can be mined and reclamation successfully completed on the western mining sites.

At the beginning of fiscal year 1981, OSM had 46 mine plans on hand for review. During the year, 58 more were received and 14 were approved. At the beginning of 1981, 15 plans were being actively evaluated, and by the end of the fiscal year, 21 plans were being evaluated.

The permanent program rules on federal lands (30 CFR Chapter VII, Subchapter D) become effective in each state on the approval date for each state program. Plans and permit applications under the permanent program are being jointly reviewed by OSM and the states. It is expected that states with approved permanent program cooperative agreements will undertake a significant amount of responsibility for the technical and environmental review of mine plans in future years.

From the effective date of the permanent regulatory program, March 13, 1979, to the end of fiscal year 1981, four complete federal lands unsuitability petitions have been received by OSM.

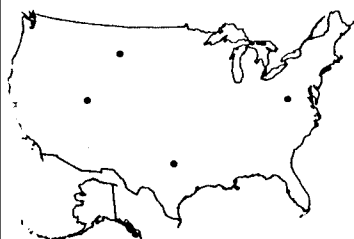
## Designation Of Lands Unsuitable For Mining

The past interior secretary made a decision on December 16, 1980, on the first complete petition received by OSM, which concerned the Alton coal field adjacent to Bryce Canyon National Park in southern Utah. His decision was made in response to an unsuitability petition filed by the Environmental Defense Fund, Friends of the Earth, the Sierra Club and others. The petition involved 203,900 acres of federal land, 16,300 acres of state land, and 68,600 acres of private land. The decision to permit surface coal mining in a part of the Alton coal field has been challenged in the U.S. District Court for the District of Utah.

The second complete petition received by OSM was from the West Virginia Highlands Conservancy. It requested that certain federal lands within the Monongahela National Forest, located in the watershed of the Shavers Fork River in West Virginia, be designated as unsuitable for surface coal mining operations. The decision on the Shavers Fork petition was made on April 27, 1981. It rejected an unsuitability designation, but placed conditions on coal mining operations in the petitioned areas. The decision has been challenged administratively and judicially.

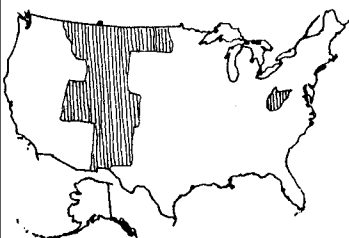
The Tongue River petition was received by OSM on December 29, 1980, from the Northern Plains Resource Council. The petition requested that 194,650 acres of combined federal and state land in southeast Montana along the Tongue River be designated as unsuitable for surface coal mining operations. The petition was processed jointly by the State of Montana and OSM. In December 1981, Montana and OSM rejected the petition, but placed conditions on future mining in the area.

On August 7, 1981, John Prager of Elgin, Texas, petitioned OSM with respect to 2,375 acres of federal land which is part of the Camp Swift Military Reservation located about 30 miles southeast of Austin, Texas. The State regulatory authority received a petition at the same time with respect to approximately 30,000 acres of privately owned land adjacent to the federal land. A study on the unsuitability of the land areas for surface coal mining operations is underway.



UNSUITABILITY PETITIONS

## Federal/State Cooperative Agreements



OSM/STATE COOPERATIVE  
AGREEMENTS

The administration of most of the act's requirements for the federal lands program may be delegated by OSM to states through cooperative agreements. By means of such agreements, state regulatory authorities enforce the requirements of the act on federal lands. Certain responsibilities that cannot be delegated to the state are retained by the secretary, such as the designation, or termination of designation, of federal lands unsuitable for surface coal mining; the determination of when, where and how to lease federal coal and; approval or determination of postmining land use for federal lands.

During 1981, permanent program cooperative agreements were entered into with Wyoming and Montana. Processing of requests for permanent program cooperative agreements is proceeding for Colorado, New Mexico, North Dakota, Utah and West Virginia. OSM expects that most other states with coal development on federal lands will request cooperative agreements under the permanent program.

During 1981, surface coal mining and reclamation operations on Indian lands were regulated by several laws under the Secretary of the Interior. Section 710 710 (d) of the act became effective on February 3, 1980, making most of the act's permanent program requirements applicable to Indian lands. Regulations under Section 710(d), providing for the control of surface coal mining on Indian lands, have been drafted and are expected to be published in 1982.

## Indian Lands Program

Draft legislation which would allow Indian tribes to become the regulatory authority on Indian lands was submitted to the coal-owning tribes for their review and comment in 1980. This legislation was prepared in response to the requirements of Section 710(a) and was based on the study report of the Council of Energy Resources Tribes (CERT) and on a jurisdiction study by department's solicitor's office. Meetings were held with the seven coal-owning tribes to explain and discuss the proposals. The draft legislation is intended to allow Indian tribes to elect to assume full regulatory authority over surface coal mining on Indian lands. The draft was revised to reflect tribal concerns and is being reviewed.

A memorandum of understanding among OSM, U.S. Geological Survey, and the Bureau of Indian Affairs, which was signed on May 8, 1980, continues to define the role of Indian tribes as coal owners and documents arrangements for carrying out the responsibilities of the federal government with respect to coal operations on Indian lands.

A cooperative agreement was consummated between OSM and the Navajo Tribe on September 30, 1981. The agreement is designed to assist the tribe in establishing a coal mining reclamation program and to provide it to review mine and reclamation plans for apparent completeness, to prepare technical and environmental assessments, and to conduct other activities.

INDIAN LANDS	ON HAND -- 1981	PLAN SUBMITTED	PLANS FOUND COMPLETE	PLANS FOUND INCOMPLETE	TECHNICAL ANALYSIS COMPLETED	ENVIRONMENTAL ANALYSIS COMPLETED	EIS COMPLETED	PLANS APPROVED	PLANS PENDING
ARIZONA	0	1	1	0	1	1	0	0	1
MONTANA	0	0	0	0	0	0	0	0	0
NEW MEXICO	0	3	0	3	0	0	0	0	3

## Indian Land Mine Plan Review Status





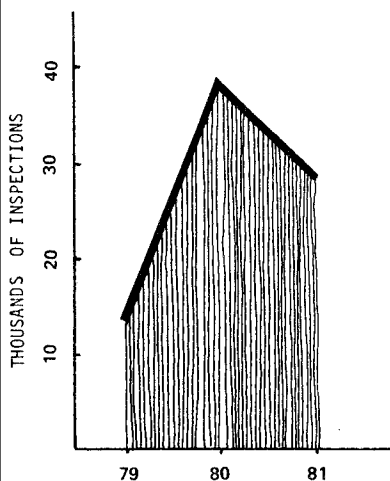
# INSPECTION & ENFORCEMENT

During the fiscal year OSM conducted 29,639 inspections which covered about 68 percent of the inspectable mine sites within its jurisdiction. These inspections produced 3,094 notices of violations and 863 cessation orders identifying 6,836 single violations between the two inspection categories. In addition, OSM received 863 citizen complaints, and 98 percent of these resulted in OSM inspections.

A review of the year's activities indicates that the majority of violations were related to sediment control, failure to have mining maps, improper or lack of signs and markers, effluent limitations being exceeded, improper haul or access roads, and illegal backfilling and grading.

Assessment activities during the fiscal year resulted in approximately \$11 million in civil penalties. About \$1.1 million of these assessments have been collected and about \$8.6 million in assessment cases have been turned over to the U.S. Department of Justice for collection.

# OSM Inspection Activities (FY 1981)



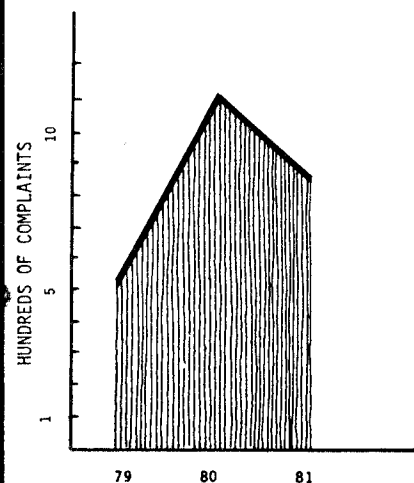
STATE	INSPECTIONS		NOTICES OF VIOLATION	CESSATION ORDERS	CITIZEN COMPLAINTS	NUMBER OF VIOLATIONS
	COMPLETE	PARTIAL				
ALABAMA	2110	421	240	139	37	540
ALASKA	0	0	0	0	0	0
ARIZONA*	1	8	1	0	0	1
ARKANSAS	46	17	2	0	0	7
COLORADO	2	21	2	0	0	2
GEORGIA**	21	8	4	6	0	12
ILLINOIS	634	381	66	8	8	88
INDIANA	1028	878	349	134	32	871
IOWA	19	13	2	0	0	3
KANSAS	31	19	2	0	1	2
KENTUCKY	5265	2493	847	221	378	1999
LOUISIANA	0	0	0	0	0	0
MARYLAND	29	59	5	2	1	9
MISSISSIPPI	0	0	0	0	0	0
MISSOURI	15	54	0	0	1	0
MONTANA	6	5	2	0	0	2
NEW MEXICO	15	26	1	0	0	2
NORTH DAKOTA	3	0	0	0	0	0
OHIO	2166	1014	436	77	34	769
OKLAHOMA	309	172	28	5	11	59
PENNSYLVANIA	4162	2431	486	63	209	810
RHODE ISLAND	0	0	0	0	0	0
TENNESSEE	762	962	295	138	107	1001
TEXAS	2	0	0	0	0	0
UTAH	15	15	5	0	0	8
VIRGINIA	670	571	36	35	35	382
WASHINGTON**	4	0	2	0	0	2
WEST VIRGINIA	1086	1604	162	34	9	267
WYOMING	3	1	0	0	0	0
<b>TOTAL</b>	<b>18405</b>	<b>11173</b>	<b>3094</b>	<b>863</b>	<b>863</b>	<b>6836</b>

\* No mining on non-Indian lands  
\*\* State elected not to submit a program

FY 1979 - 1981 INSPECTIONS

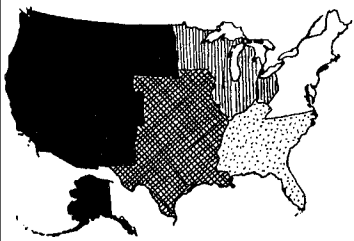
# Violation Types By State (FY 1981)

STATE	VIOLATIONS																			
	OTHER VIOLATIONS	DISTANCE PROHIBITIONS	EXCEEDING PERMIT	MINING WITHOUT PERMIT	SPOIL ON DOWNSLOPE	REVEGETATION	BLASTING	DAMS	ROADS	BUFFER ZONES	WATER MONITORING	EFFLUENT LIMITATIONS	SEDIMENT PONDS	TOPSOIL HANDLING	IMPROPER FILLS	RILLS & GULLIES	HIGHWALL ELIMINATION	BACKFILLING & GRADING	SIGNS AND MARKERS	AUTHORIZATION TO OPERATE
ALABAMA	92	5	21	22	4	82	5	0	0	1	3	35	72	44	1	20	3	75	54	1
ALASKA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARIZONA	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARKANSAS	4	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0
COLORADO	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
GEORGIA	4	0	0	1	0	0	0	0	0	0	0	3	3	0	0	0	0	1	0	0
ILLINOIS	6	0	2	0	0	5	13	0	3	0	9	16	18	7	0	1	0	4	4	0
INDIANA	114	26	0	7	0	68	31	0	6	8	52	31	191	91	0	50	18	15	140	17
IOWA	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
KANSAS	0	0	83	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
KENTUCKY	222	11	0	70	116	113	25	5	217	4	56	83	297	128	134	27	85	83	213	27
MARYLAND	0	0	0	0	0	0	1	0	0	0	0	1	2	0	1	0	0	2	2	0
MISSOURI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MONTANA	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
NEW MEXICO	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
NORTH DAKOTA	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OHIO	113	17	1	16	1	13	18	0	29	4	3	132	235	56	11	35	0	29	33	4
OKLAHOMA	12	2	76	0	0	6	5	0	0	1	2	1	11	6	0	2	0	1	8	1
PENNSYLVANIA	30	10	7	17	2	31	11	1	25	17	25	122	258	29	1	11	4	76	50	14
TENNESSEE	115	3	0	93	25	140	26	0	93	11	0	21	203	50	0	20	19	88	81	6
TEXAS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UTAH	0	0	0	0	0	0	1	0	3	0	1	0	2	1	0	0	0	0	0	0
VIRGINIA	15	4	10	17	43	19	0	0	55	1	4	24	102	12	26	1	21	9	19	0
WASHINGTON	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
WEST VIRGINIA	25	4	1	2	3	15	2	1	25	3	23	60	53	5	9	5	2	24	3	2
WYOMING	0	0	209	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0
TOTAL	753	82	203	248	194	493	137	7	456	51	179	529	1473	430	183	172	407	158	609	72

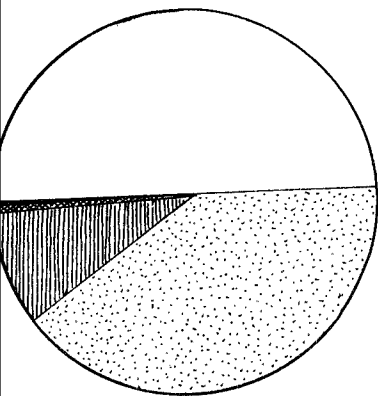


CITIZEN COMPLAINTS

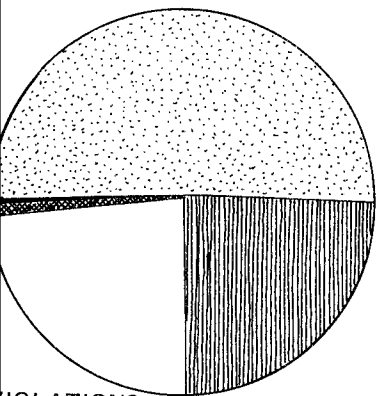
# Violations By Type Nationwide (FY 1981)



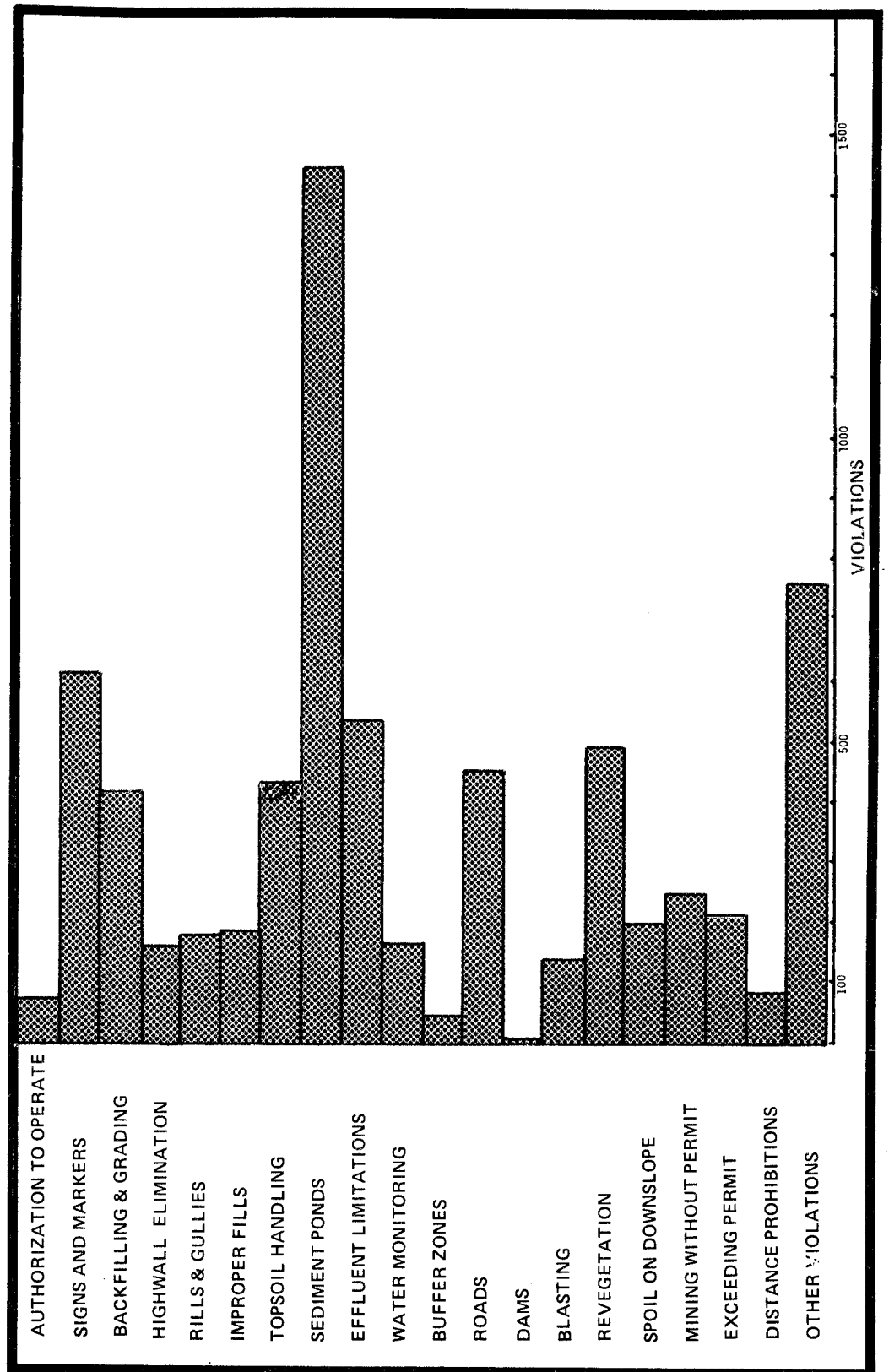
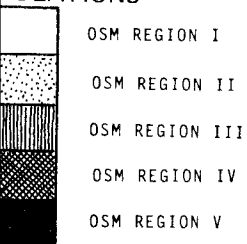
OSM REGIONS



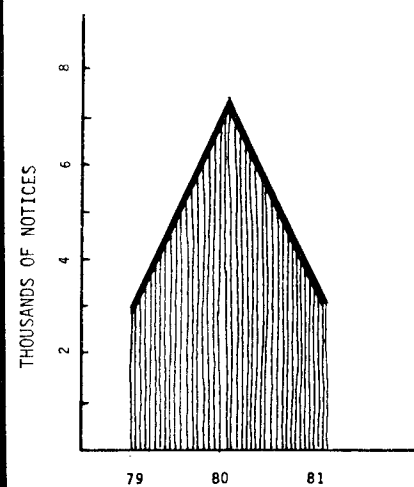
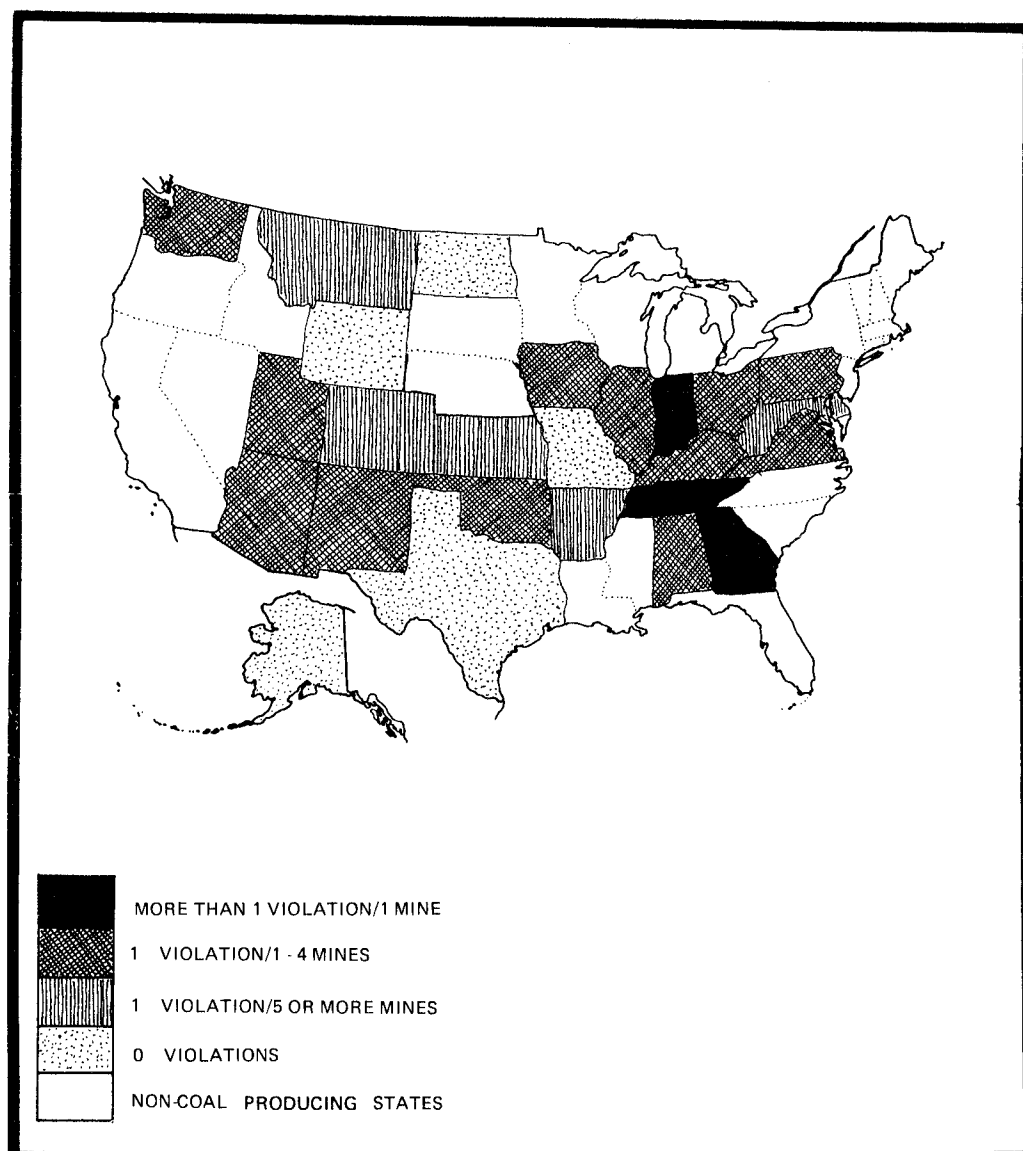
NUMBER OF MINES



VIOLATIONS



## Distribution Of Violations By State (FY 1981)



NOTICES OF VIOLATIONS

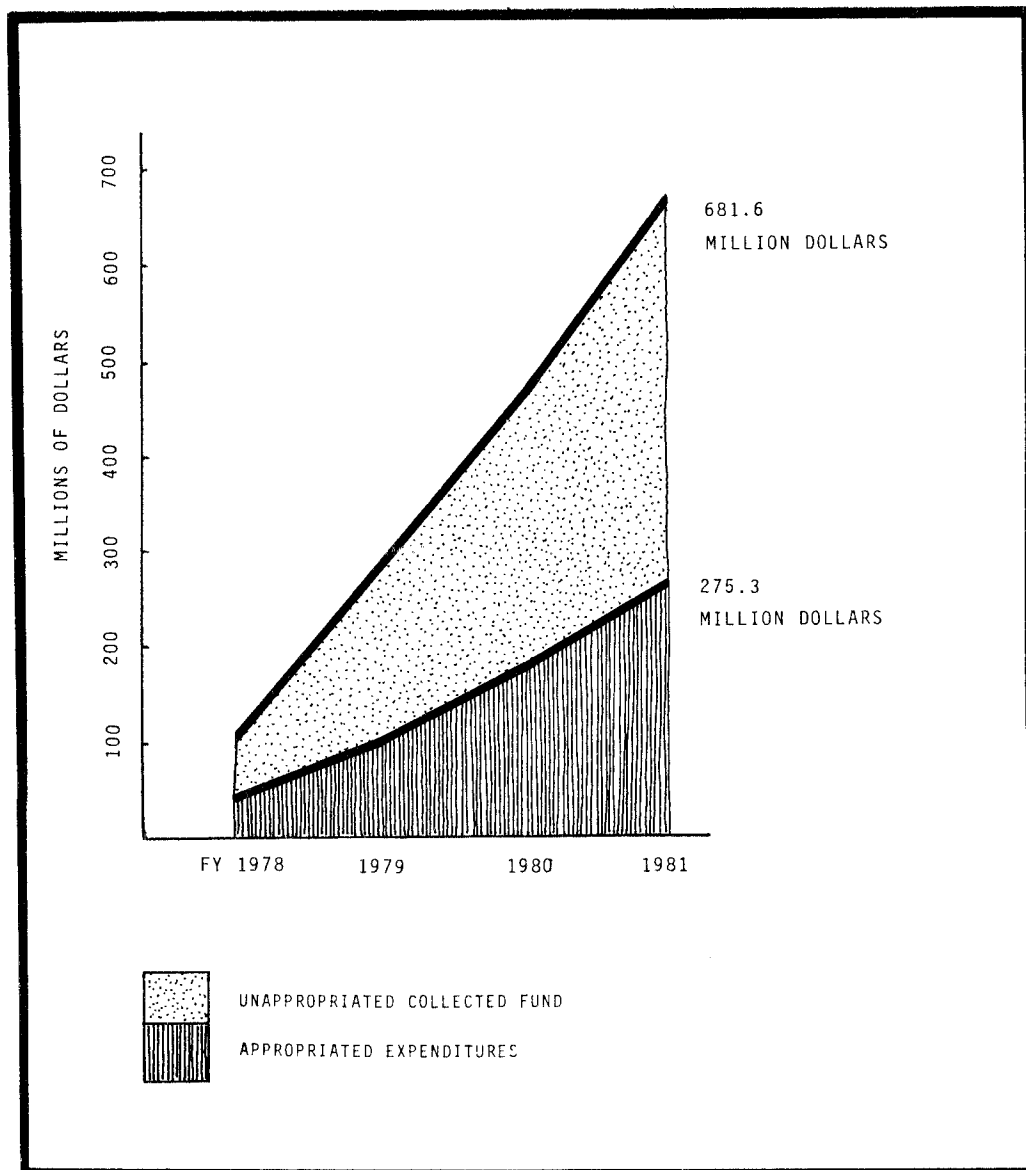


# ABANDONED MINE LANDS

All the states with regulatory primacy are also expected to have approved Abandoned Mine Land (AML) reclamation programs. Present efforts are being made to have the regulatory and AML programs processed simultaneously to minimize delays in the states' starting these projects. Of the four state AML programs which have been approved, three were approved during FY 1981. Six state programs were approved contingent upon state primacy.

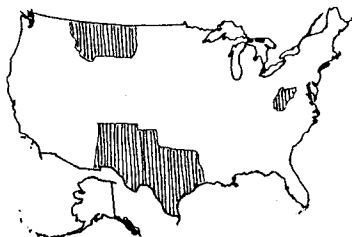
During the fiscal year, the approximately \$22.5 million actually spent included almost \$8 million in the Small Operator Assistance (SOAP) category, a little over \$5.5 in the Rural Abandoned Mine Program (RAMP) section, and almost \$9 million for federal construction projects or cooperative agreements with the states. During the same time period, state assistance programs added \$4.6 million to the AML fund for abandoned mine reclamation activities.

## Cumulative Fund Collection/ Expenditures



# **AML Program Status** (as of Sept. 30, 1981)

STATE	SUBMITTED PROGRAM OR WORK PLAN	SUBMISSION PENDING	NO SUBMISSION	APPROVED
ALABAMA				
ALASKA				
ARIZONA				
ARKANSAS				
COLORADO				
GEORGIA				
ILLINOIS				
INDIANA				
IOWA				
KANSAS				
KENTUCKY				
MARYLAND				
MISSOURI				
MONTANA				
NEW MEXICO				
NORTH DAKOTA				
OHIO				
OKLAHOMA				
PENNSYLVANIA				
TENNESSEE				
TEXAS				
UTAH				
VIRGINIA				
WASHINGTON				
WEST VIRGINIA				
WYOMING				
CROW TRIBE				
HOPI TRIBE				
NAVAJO TRIBE				
TOTAL	10	11	2	4



APPROVED PROGRAMS



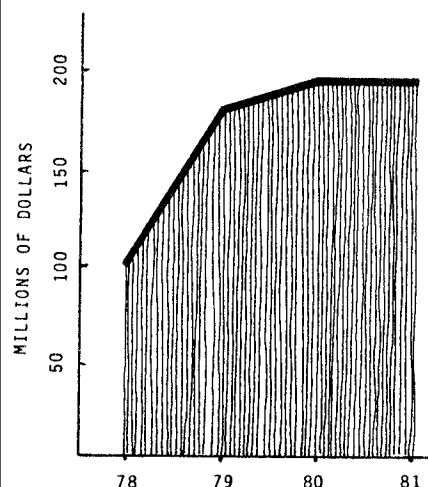
State And Indian  
Program Assistance  
(in dollars)

STATE	PLAN PREPARATION	FIRST ANNUAL SUBMISSION OF PROJECTS	PROGRAM GRANTS
ALABAMA	176,300	300,104	3,977,002***
ALASKA	—	—	—
ARKANSAS	60,000	100,137	—
COLORADO	688,764	447,693	—
GEORGIA	—	—	—
ILLINOIS	130,000	951,754	—
INDIANA	107,740*	650,458	—
IOWA	25,000	—	—
KANSAS	28,800	—	—
KENTUCKY	569,617	481,560	14,466,689***
MARYLAND	—	70,794	—
MISSOURI	84,085	253,524	—
MONTANA	220,047	—	273,926
NEW MEXICO	227,905	222,492	438,715***
NORTH DAKOTA	250,801	470,963	—
OHIO	341,300	755,830	—
OKLAHOMA	74,650	205,598	—
PENNSYLVANIA	259,820*	—	—
TENNESSEE	146,491	—	—
TEXAS	81,980	63,446	51,800***
UTAH	—	—	—
VIRGINIA	203,081	1,443,927	7,689,005***
WASHINGTON	—	—	—
WEST VIRGINIA	413,479	1,397,635	4,339,360
WYOMING	1,297,882	388,782	—
CROW	181,749	296,101	—
HOPI	205,149	—	—
NAVAJO	259,722*	—	—
TOTAL **	6,034,362	8,500,798	31,236,497
*FY 1981 **CUMULATIVE TOTAL ***PENDING			

# AML Fund Status (in dollars)

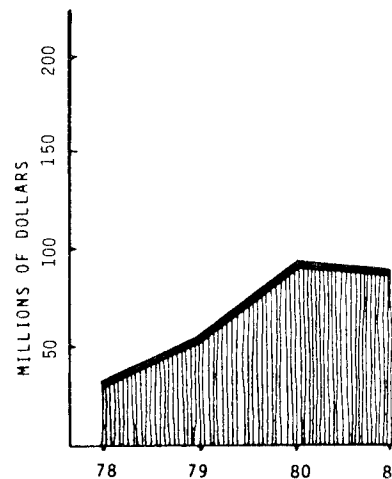
STATE	FEES COLLECTED (FY 1981)	AML INVENTORY DEVELOPMENT EXPENDITURES (FY 1981)	RAMP PROJECTS (FY 1981)
ALABAMA	5,869,622	0	272,000
ALASKA	291,255	14,856	0
ARIZONA	0	0	0
ARKANSAS	83,453	0	252,000
COLORADO	5,844,958	0	0
GEORGIA	598	0	0
ILLINOIS	11,568,366	104,774	316,000
INDIANA	9,073,410	10,000	119,000
IOWA	200,085	63,405	334,000
KANSAS	304,488	75,400	117,000
KENTUCKY	34,522,145	1,249,888	644,000
MARYLAND	1,166,852	0	119,000
MISSOURI	1,674,041	0	200,000
MONTANA	10,238,215	0	0
NEW MEXICO	3,853,395	0	0
NORTH DAKOTA	1,768,892	0	147,000
OHIO	9,718,462	29,500	786,000
OKLAHOMA	1,796,348	13,925	194,000
PENNSYLVANIA	21,028,767	0	1,025,000
TENNESSEE	2,347,349	0	23,000
TEXAS	3,259,780	0	165,000
UTAH	1,952,695	0	0
VIRGINIA	6,651,811	172,033	0
WASHINGTON	1,638,357	22,891	0
WEST VIRGINIA	18,583,319	228,583	622,000
WYOMING	33,888,537	0	267,000
CROW TRIBE	1,202,075	11,278	0
HOPI TRIBE	456,176	0	0
NAVAJO TRIBE	6,794,918	0	0
OTHER STATES			
TOTAL	195,778,383	2,839,600 *	5,602,000

\* Includes funding to other states without FY 1981 coal production.



ANNUAL FUND COLLECTION

INTERIOR PROJECTS (FY 1981)	SOAP EXPENDI- TURES (FY 1981)	FY 1981 STATE ALLOCATION	TOTAL REVENUES COLLECTED (FY 78-81)	STATE
179,000	0	2,934,811	20,826,209	ALABAMA
0	0	145,627	989,628	ALASKA
380,000	0	0	0	ARIZONA
3,000	0	41,726	364,630	ARKANSAS
39,000	335,000	2,922,479	17,831,943	COLORADO
0	60,000	299	23,415	GEORGIA
226,000	300,000	5,784,183	48,283,052	ILLINOIS
38,000	0	4,536,705	33,424,170	INDIANA
0	0	100,042	654,577	IOWA
1,135,000	0	152,244	1,247,482	KANSAS
928,000	0	17,261,072	120,728,001	KENTUCKY
0	200,000	583,426	3,288,224	MARYLAND
0	144,000	837,020	7,091,480	MISSOURI
89,000	0	5,119,109	33,826,995	MONTANA
95,000	100,000	1,926,697	8,769,719	NEW MEXICO
22,000	0	844,446	5,582,189	NORTH DAKOTA
166,000	0	4,859,231	41,022,602	OHIO
0	0	898,174	6,611,395	OKLAHOMA
6,889,000	240,000	10,514,383	78,905,484	PENNSYLVANIA
212,000	766,000	1,173,674	8,455,521	TENNESSEE
8,000	0	1,629,890	9,354,614	TEXAS
0	0	976,347	6,133,241	UTAH
353,000	609,000	3,325,905	23,715,021	VIRGINIA
13,000	0	819,178	6,360,368	WASHINGTON
1,548,000	4,000,000	9,291,659	69,084,331	WEST VIRGINIA
79,000	0	16,944,268	99,551,338	WYOMING
0	0	601,037	4,984,954	CROW TRIBE
0	0	228,088	1,680,285	HOPI TRIBE
0	0	3,397,459	22,840,739	NAVAJO TRIBE
32,000	0	0	0	OTHER STATES
12,550,000	6,764,000	97,889,191	681,631,620	TOTAL

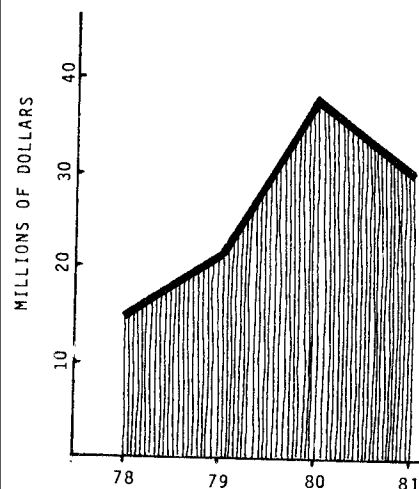


FUND EXPENDITURES

# Interior Department Projects

(Completed Or Under  
Contract In FY 1981)

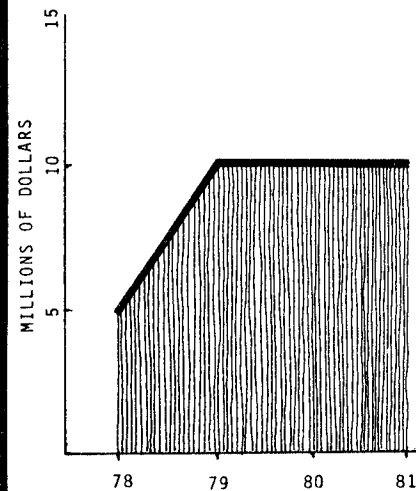
STATE	HIGH PRIORITY		EMERGENCY	
	NO.	DOLLAR AMOUNT	NO.	DOLLAR AMOUNT
ALABAMA	10	888,153	3	20,966
ALASKA				
ARIZONA			1	380,000
ARKANSAS			1	11,000
CALIFORNIA			1	31,858
COLORADO			4	44,515
GEORGIA				
ILLINOIS	15	2,224,828	13	203,887
INDIANA	1	19,870	4	17,801
IOWA				
KANSAS	2	994,236	9	667,246
KENTUCKY	15	10,323,777	10	973,503
MARYLAND	1	119,262		
MISSOURI	4	4,243,000		
MONTANA	6	437,889	2	42,865
NEW MEXICO	8	258,620	3	113,780
NORTH DAKOTA	3	887,568		
OHIO	25	6,781,316	12	235,721
OKLAHOMA	3	134,460		
PENNSYLVANIA	50	16,442,207	43	7,598,859
TENNESSEE	4	3,703,879	1	13,938
TEXAS	3	767,400		
UTAH				
VIRGINIA	15	4,492,102	3	322,861
WASHINGTON	1	27,487	2	5,975
WEST VIRGINIA	11	7,519,575	25	2,303,097
WYOMING	4	483,458	3	14,200
CROW TRIBE				
HOPI TRIBE				
NAVAJO TRIBE				
TOTAL	181	60,749,087	140	13,002,072



FY 1978 - 1981 INTERIOR  
PROJECTS APPROPRIATIONS

## Rural Abandoned Mine Program Projects

STATES	FISCAL YEAR 1981			CUMULATIVE TO DATE (FY 1978 - 81)		
	NUMBER	ACRES	DOLLARS	NUMBER	ACRES	DOLLARS
ALABAMA	14	85	272,223	30	352	1,401,434
ARKANSAS	1	29	252,111	6	84	752,400
ILLINOIS	3	18	315,954	6	39	497,880
INDIANA	24	348	111,870	28	542	406,738
IOWA	6	131	334,188	14	341	1,870,619
KANSAS	1	81	116,782	1	81	116,782
KENTUCKY	8	170	643,710	16	397	1,877,021
MARYLAND	2	19	118,964	5	52	593,964
MISSOURI	1	18	199,972	4	177	775,847
MONTANA	0	0	0	0	0	0
NORTH DAKOTA	4	421	147,434	5	501	204,816
OHIO	12	109	785,876	32	275	2,782,253
OKLAHOMA	0	0	193,864	3	208	646,852
PENNSYLVANIA	15	130	1,024,948	37	420	4,325,658
SOUTH DAKOTA	2	55	50,762	2	55	195,610
TENNESSEE	1	3	23,200	13	78	263,489
TEXAS	4	44	164,666	19	530	869,829
VIRGINIA	0	0	0	0	0	0
WEST VIRGINIA	10	30	621,823	15	61	1,338,887
WYOMING	3	62	267,120	8	290	1,441,426
TOTAL	111	1,753	5,654,467	244	4,483	20,361,505



FY 1978 - 1981 RAMP  
APPROPRIATIONS



# TECHNICAL ASSISTANCE

During the fiscal year OSM continued to monitor various research and development projects and initiated a new project designed to improve mine operations and reclamation state-of-the-art for state and industry use. Among the nine projects is an experimental practice using gravity transport techniques for spoil material from an upper seam to a lower bench for distribution in horizontal layers in the final fill position. Another project deals with development of an industrial area on top of a valley fill. Studies relating to soil horizon mixing to increase crop productivity, revegetation of a slurry pond without soil cover and several innovative methods of excess spoil fill construction were continued.

## Experimental Practices

The Small Operator Assistance Program (SOAP) which was originally scheduled to take effect during the permanent regulatory program was initiated early so data collection and analysis could be completed to allow permit applications to be submitted within the time tables for the permanent regulatory program. By the end of the fiscal year, 782 operators applied for assistance and 648 were approved.

## Small Operator Assistance

Data collection, analysis, and interpretative reports required in the operator's permit application are supplied by qualified laboratories under contract to the regulatory authorities. During the fiscal year, 420 SOAP contracts were awarded totaling about \$10.5 million.

In line with the regulations which delegate SOAP responsibility to states, 15 states were operating their own programs and awarded contracts with qualified laboratories totaling \$9.5 million.

## Experimental Practices

STATE	DESCRIPTION	REGULATIONS AFFECTED	DATE APPROVED
COLORADO	Construction of an excess spoil fill with no underdrives and using 100-foot lifts of material.	816.71-.73	Pending
ILLINOIS	Mixing and soil drainages to improve overall crop productivity.	816.21, .24, .100, 816.101, and .102	11/13/79
ILLINOIS	Reclamation of a slurry pond by vegetation instead of soil cover.	816.103	7/17/81
KENTUCKY	Gravity transport of spoil material from an upper seam to a lower bench prior to rehandling in the construction of an excess spoil fill.	816.71, .74	7/11/81
KENTUCKY	Develop an industrial area on top of a hollow fill. Partial highwall retention is part of this experimental practice to provide a spoil source.	816.102	1/12/82
OHIO	Construction of excess spoil fill using an up-stream construction technique. Four sites, each with different characteristics are being constructed.	715.15(a)(7)	8/13/80



EXPERIMENTAL PRACTICES



**Small Mine Operator  
Assistance Program  
Grants To States  
(in dollars)**

STATE	ADMINISTRATION GRANTS		OPERATIONAL GRANTS	
	FY 1980	FY 1981	FY 1980	FY 1981
ALABAMA	33,172	118,100	2,500,000	0
ARKANSAS	20,798	0	49,525	0
COLORADO	29,182	0	0	240,000
ILLINOIS	0	20,000	312,000	300,000
IOWA	4,000	0	63,040	0
KANSAS	10,500	0	0	0
KENTUCKY	0	296,205	7,700,000	0
MARYLAND	35,000	0	300,000	200,000
MISSOURI	0	0	0	138,000
MONTANA	13,783	0	57,335	0
NEW MEXICO	0	0	0	100,000
OHIO	65,783	90,151	2,500,000	0
OKLAHOMA	0	15,000	0	0
VIRGINIA	69,138	138,765	325,000	609,000
WEST VIRGINIA	0	0	1,633,862	4,000,000
TOTAL	81,356	678,221	15,440,762	5,587,000



# RESEARCH & MINERAL INSTITUTES

The Applied Research Branch deals with problems and issues confronted mainly by two program elements, namely, a regulatory program and an abandoned mine program. To accomplish the objectives of these programs, the research program has been organized to (a) initiate short-term research projects; (b) develop and improve cost-effective reclamation technologies and (c) ensure interagency research coordination. The magnitude of the research program has averaged about \$2 million dollars a year between 1978 and 1981.

## Research

The applied research program is concerned mainly with these areas: geotechnical problems to develop alternative and more cost-effective methods for design and construction of engineering structures such as sedimentation ponds, valley fills, and coal waste embankments; environmental issues such as control of mine water discharge and coal waste leachate; monitoring procedures for surface and ground water, fish and wildlife, and revegetation success; and reclamation methods including revegetation techniques and native species selection.

The inception of regulatory reform in 1981 to emphasize the performance standards and provide flexibility for design and reclamation techniques has created a great demand for technical guidance in the implementation of regulatory programs. Consequently, the emphasis on the research program has been redirected to include the development of technical handbooks, manuals, and alternative approaches to assist the industry and states in achieving regulatory compliance. Areas which are and will be studied include backfilling and grading, excess spoil disposal, access roads, sedimentation ponds, prime farmland, alluvial valley floors, highwall stability, and hydrologic consequences of mining.

The Mining and Mineral Institutes Branch continued grant support of various research and development projects with 31 leading colleges and universities across the country under the Mining and Mineral Institute program. These institutions were responsible for conducting approved research efforts and demonstration projects that relate to mining and mineral development activities impacting such resources as recreation, biological values, and related ecosystems. The program is also responsible for training scientists and mineral engineers in mining and mineral-related resource fields. At the end of the fiscal year these activities were transferred from OSM to the Bureau of Mines as part of an agreement between the two agencies.

## Mineral Institutes

## **Applied Research Initiated & Completed In FY 1981**

Three applied research projects were completed in fiscal year 1981 using OSM funding.

The first project entitled, "Mineral Planning in Great Britain and its Relevance to the American Mining Industry" was funded with \$7,497 from the fiscal year budget.

The project revealed that British mining permits are granted within a much broader system of land use control than is practiced in the United States. The British system operates through planning authorities that consider the definite life of mining and the merits of postmining land use schemes.

The primary objections to mining are loss of a mature landscape and the loss of agricultural productivity. In many ways, Great Britain's planning systems are set up to minimize permanent loss of agricultural land to development.

The second project completed during the fiscal year using OSM funds was a \$9,000 project establishing a Field Institute on Western Energy Opportunities, Problems, and Policy Issues.

The institute is conducted by the Colorado School of Mines during the August congressional recess for approximately 40 selected aides for the congressional and executive branches of the federal government. The five-and-one-half day institute sessions begin at the school with an introduction to western energy issues and is followed by a five-day field trip to energy sites which reflect current energy issues and problem areas. U.S. Department of the Interior sponsors include the Bureau of Mines, the Office of Surface Mining, the Bureau of Land Management and the U.S. Geological Survey.

The third applied research project completed during the fiscal year required an expenditure of \$14,300 from OSM's budget for a project, "Study on Disposal of Excess Spoil."

This research effort consisted of a nationwide review of engineering practices and physiographic and environmental conditions which have an impact on the disposal of excess spoil for surface and underground coal mining.

**New And Continuing  
Applied Research  
Projects**  
(In dollars)

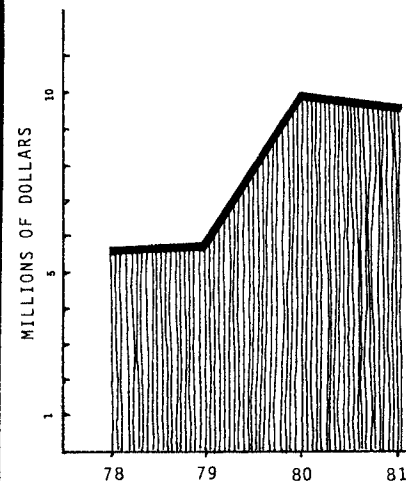
TITLE	FY 1981 FUNDING	FISCAL YEAR OF FINAL FUNDING	COMPLETION DATE
Development of Post-mining Land Reclamation Opportunity Handbook	62,000	1981	6/82
Qualification of the Efficiency of Alternative Sediment Measures	88,409	1981	6/82
Development of Design Manual for Backfilling and Grading of Surface Coal Mine Areas	76,424	1981	10/82
Development of Environmental and Design Manual for Disposal of Excess Coal Mine Spoil	79,300	1981	3/82
Assessment of Technology for Coal Mine Roads	37,565	1981	4/82
Coal Water Leachate Problems (MOD)	12,856	1981	3/82
Assessment of Topsoil Fertility at Reclamation Sites in the United Kingdom and West Germany in Comparison	9,562	1981	12/82
Design Manual for Diversion on Surface Mining	5,030	1981	1/82
Approval Criteria for Final-Cut Lakes	16,295	1981	1/82
Development of a Management Goal for Line Managers to Optimize Inspection Personnel Productivity	12,000	1981	12/81
Affects of Drill Stem Grease on Overburden Samples	18,620	1981	10/82
Collection of Representative Coal Refuse Samples for Leachate Generation Studies	45,767	1981	9/82
Highwall Stability Analysis	24,192	1981	9/82
Hydrologic Connection between Surface Waters and Ground Waters in the Carbondale Group of Indiana Counties	25,594	1981	9/82
Development of Diversion Manual	9,740	1981	1/82
Coors Ridge Mining Demonstration	71,673	1979	3/83
Evaluation of Methods of Handling Toxic Materials	85,000	1980	3/82
Study of Environmental Effects of Valley Fill Versus Abandoned Bench Storage of Initial Cut Spoil Material	44,088	1981	6/82

## Interagency Research Projects

PROJECT TITLE	COOPERATING AGENCIES	FY 1981 FUNDING (DOLLARS)	OSM FUNDING TO COMPLETE (DOLLARS)	ESTIMATED COMPLETION DATE
Tug Fork Watershed Hydrologic Study	USGS	97,050	0	4/85
Federal High-altitude Photography Program	USGS	95,000	190,000	12/84
Wetland Identification and Management Criteria for the Western Kentucky Coal Field	FWS	16,000	0	12/82
Update of "Coal and the Environment Abstract Series"	EPA/BCR	35,000	0	9/82
Stoney Fork Coal Hydrology Study	USGS	40,000	0	9/87
Soil Conservation Service Plant Materials Studies to Identify Plant Associations Suited to Coal Mine Reclamation	SCS/USDA	92,000	184,000	12/84
Detailed Design and Demonstration of Underground Disposal of Coal Mining Waste	USBOM	400,000	0	9/83
Establishment of Cooperative Statewide Fish and Wildlife Species Information System	FWS	400,000	0	9/82
Thermal Infrared Data of Centralia, Pa.	EPA	8,000	8,000	12/81
Sediment/Hydrology on 18 Small Watersheds of the Appalachian Plateau of Maryland, Pennsylvania, and West Virginia	TVA	225,000	0	10/84
Mine Operators Manual for Describing Site-Specific Hydrologic Conditions	USGS	250,000	0	12/82
CORE Program Support	NASA	55,000	55,000	9/82
Optimum Moisture Requirements for the Establishment of Natural Species on Top Soiled Coal Mine Spoils in the Four Corners Area of New Mexico	USGS/USDA	168,000	280,000	12/82
Ground Water (Georgia)	TVA	48,000	0	9/82
TOTAL		1,929,050	717,000	

## Mineral Institutes FY 1981 Grants (in dollars)

INSTITUTE	ALLOTMENTS	SCHOLARSHIPS & FELLOWSHIPS	RESEARCH
University of Alabama	110,000	0	200,063
University of Alaska	82,500	0	53,541
University of Arizona	82,500	0	302,492
University of California	82,500	0	280,122
Colorado School of Mines	82,500	0	248,714
Georgia Institute of Technology	110,000	160,000	67,798
University of Idaho	82,500	0	49,656
Southern Illinois University	82,500	0	608,707
Purdue University	82,500	160,000	207,285
Iowa State University	82,500	160,000	50,948
University of Kentucky	110,000	0	379,536
Louisiana State University	110,000	160,000	72,510
Massachusetts Institute of Technology	82,500	0	227,183
Michigan Technological University	110,000	0	270,123
University of Minnesota	82,500	0	105,488
University of Mississippi	82,500	0	104,789
University of Missouri-Rolla	82,500	0	69,734
Montana College of Mineral Sci. & Tech.	82,500	0	244,046
University of Nevada-Reno	110,000	160,000	48,515
New Mexico Institute of Mining and Tech.	82,500	0	223,763
University of North Dakota	110,000	160,000	54,760
Ohio State University	82,500	0	146,605
University of Oklahoma	82,500	0	54,027
Pennsylvania State University	82,500	0	401,694
South Dakota School of Mines and Tech.	110,000	160,000	71,970
University of Texas-Austin	82,500	0	44,077
University of Utah	82,500	0	250,586
Virginia Polytechnic Institute	110,000	160,000	197,003
University of Washington	110,000	160,000	29,184
University of West Virginia	82,500	0	120,721
University of Wyoming	82,500	0	14,370
<b>TOTAL</b>	<b>2,860,000</b>	<b>1,440,000</b>	<b>5,300,000</b>



FY 1978 - 1981 MINERAL  
INSTITUTES APPROPRIATIONS



MINERAL INSTITUTES

## Mineral Institutes Research Projects

SCHOOL/LOCATION	PROJECT TITLE
University of Alabama University, Alabama	Surface Mining Blasting Effects on Underground Coal Mine Stability
University of Alaska Fairbanks, Alaska	Streamflow Estimation for Surface Mining in Northern Regions
University of Arizona Tucson, Arizona	Characterization and Processing of Coal-Fired Copper Reverberatory Flue Ground and Air Vibrations from Blasting
University of California Berkeley, California	Improvements of the Performance of Copper Electrowinning in Fluidized Bed Processing Mineral Fines by Column Flotation Role of Rock-Fluid Reactions in the Recovery of Petroleum
Colorado School of Mines Golden, Colorado	Use of Surfactants to Improve Oil Recovery Revegetating Disturbed Areas to Protect the Environment
Georgia Institute of Technology Atlanta, Georgia	Structural Location and Role of Hydrogen Ions in Kaolinite and its Products in Aluminum Removal
Southern Illinois University Carbondale, Illinois	Stable Isotope Variations in Coals and Associated Mineral Matter Coal Fines Recovery and Utilization Ground Water Leachate of Pyrite Coal Mine Spoils and the Effects on Water Reserves Productivity of Parent Materials on Mined Prime Farmlands Using Alternate Sources of Organic Materials Compared to Topsoil Replacement



YEARS IN PROGRESS/ TOTAL ESTIMATED DURATION	FY 81 FUNDS	TOTAL THOUGH FY 81
1.5/3	\$273,565	\$398,186
1/2	49,665	103,206
1/2	33,094	69,876
1/2	76,415	201,691
1/2	34,770	108,981
1/2	38,757	91,038
1/3	88,527	145,977
1/2	60,096	137,004
1/3	59,884	193,738
1/3	115,908	183,706
3/3	49,286	154,576
3/3	76,072	292,973
3/3	28,987	151,987
2/3	129,088	199,873

**Mineral Institutes  
Research Projects**  
-continued-

SCHOOL/LOCATION	PROJECT TITLE
Purdue University West Lafayette, Indiana	<p>Applicability of the Universal Soil Loss Equation to Reclaimed Surface Mine Area</p> <p>Concurrent Establishment of Ground Cover and Hardwood Trees on Reclaimed Mineland and Unmined Reference Sites</p>
Iowa State University Ames, Iowa	<p>Conditions of Soil Compaction on Mineland and Their Response to Deep Tillage</p>
University of Kentucky Lexington, Kentucky	<p>Enhanced Suspended Solids Removal in Surface Mine Sediment Ponds Using Chemical Flocculating Agents</p> <p>Nursery Techniques for Production of Free Seedlings Infected with Specific Mycorrhizal Fungi for Surface Mining Reclamation</p> <p>Erodibility and Sediment Yield from Surface Mine Spoil and Reconstructed Topsoil</p> <p>Development of Models for Simulating Stormwater Runoff for Surface Coal Mined Lands</p> <p>The Environmental Consequences of Burial Depth of Toxic Spoils and of Excessive Compaction of Prime Land in the Growth of Plants</p>
Mining and Mineral Resources Research of the Massachusetts Institute of Technology Cambridge, Massachusetts	<p>Combined Stability-Deformation Analysis for Rock Slopes in Open Pit and Strip Mines</p> <p>The Competitive Position of the United States Copper Industry: 1980-2000</p> <p>Fast Fluidized Beds in Minerals Processing</p>
Michigan Technological University Houghton, Michigan	<p>Elastic Stress Wave Propagation in Underground Hardrock Mining</p> <p>The Development of Guidelines for Closing Underground Mines</p>

YEARS IN PROGRESS/ TOTAL EST. DURATION	FY 81 FUNDS	TOTAL THROUGH FY 81
2/3	\$262,602	\$403,477
2/3	117,529	183,939
2/3	43,133	94,081
2/2	34,404	115,277
3/3	57,206	261,752
3/3	47,935	170,189
3/3	26,719	96,312
2/3	43,600	83,567
2/3	45,508	100,361
2/3	108,861	168,480
2/2	39,575	89,185
2/2	47,452	112,941
2/2	41,928	131,265

**Mineral Institutes  
Research Projects**  
-continued-

SCHOOL/LOCATION	PROJECT TITLE
University of Mississippi University, Mississippi	An Evaluation of the Engineering Properties and Lignite Resources of Wilcox Group (Lower Eocene) in Mississippi, West Virginia, Tennessee, and Alabama
University of Missouri-Rolla Rolla, Missouri	Fluid Cavitation as a Rock Crushing and Fragmentation Tool  Autoclaved Lime-Aluminosilicate Mineral for Alumina Extraction and Construction  Determination of the Washability and Flotation Characteristics of Missouri Coal Seams
University of Nevada Reno, Nevada	Geochemical Exploration for Precious Metals Using Mn/Fe Oxide Joint Coatings  Elucidation of the Fundamental Chemistry and Recovery of Gold from Carbonaceous Ore Bodies
New Mexico Institute of Mining and Technology Socorro, New Mexico	Gases in Hydrous Alteration Minerals: An Exploration Tool for Ore Deposits  Radionuclide and Heavy Metal Distribution in Recent Sediments of Major Streams in the Grants Mineral Belt  Extraction of Radionuclides from Lowgrade Ores and Mill Failings
University of North Dakota Grand Forks, North Dakota	Mineral Resources Potential Problems Associated with Mining of Cenozoic Rocks of the Williston and Powder River Basins, Northern Great Plains
Ohio State University Columbia, Ohio	Fracture Mechanics and Structural Resource Investigations Associated with Energy Recovery  Automated Blast Hole Logging and Design  Characterization of Limestone in Ohio

YEARS IN PROGRESS/ TOTAL EST. DURATION	FY 1981 FUNDS	TOTAL THOUGH FY 81
2/2	\$ 89,772	\$ 194,551
2/2	43,490	98,543
2/2	31,075	71,657
2/2	46,160	105,102
2/2	17,566	66,081
2/3	90,939	144,760
2/3	62,126	98,177
2/2	33,784	75,702
3/3	59,495	224,426
2/2	141,768	196,528
3/3	36,097	134,324
2/3	23,987	124,711
2/3	38,769	126,329

**Mineral Institutes  
Research Projects**  
-continued-

SCHOOL/LOCATION	PROJECT TITLE
University of Oklahoma Norman, Oklahoma	In Situ Mining of Bituminous Coal with Fluorinated Solvents
The Pennsylvania State University University Park, Pennsylvania	Processing of Dolomites for Refractory Applications  Cobalt Behavior in Ammonia Leaching Systems  Handbook for State and Local Taxation of Minerals  Design Procedures for Coal Mine Tunnels  Removal of Pyrite from Coal by Heap Leaching  Development of a Procedure for Land Use Potential Evaluation for Surface Mined Land  Control of Blackwater in Coal Preparation Plant Recycle and Discharge  Point Defects in Hydrometallurgical Process
South Dakota School of Mines and Technology Rapid City, South Dakota	Oxidation of Pyrite to Mag- hemite
University of Texas-Austin Austin, Texas	Rheology of Viscoelastic Fluids for Oil Recovery
University of Utah Salt Lake City, Utah	Ground Control in Multi-Level Room Pillar and Mining  Air Sparged Hydrocyclone  The Use of Coal Wastes for the Production of Alumina  Modeling of Solution Mining Systems for Deep Mineral Resource Recovery

YEARS IN PROGRESS/ TOTAL EST. DURATION	FY 81 FUNDS	TOTAL THROUGH FY 81
2/2	\$ 44,841	\$ 98,868
2/3	79,281	129,638
2/3	86,548	143,542
2/3	19,989	61,464
3/3	37,832	131,728
3/3	27,520	128,895
3/3	39,776	132,458
3/3	31,694	128,007
3/3	40,435	138,173
2/3	23,834	95,804
3/3	34,213	128,887
2/2	30,588	69,448
2/2	63,592	151,150
3/3	33,036	120,614
3/3	53,390	190,943

**Mineral Institutes  
Research Projects**  
-continued-

SCHOOL/LOCATION	PROJECT TITLE
Virginia Polytechnical Institute and State University Blacksburg, Virginia	<p>Ground Control Mechanisms in Multi-Seam Mining</p> <p>Computer Simulation of Mining Subsidence Using the Zone Area Method</p> <p>Applications on Image Processing for the Benefication of Fine-Grained Complex Sulfide Ores</p> <p>Probabilistic Modeling of Soil Loss From Surface Mining Areas</p>
University of Washington Seattle, Washington	Catalysis of Chlorination Reactions
West Virginia University Morgantown, West Virginia	<p>Development of Roof Control Criteria for Underground Long-wall Mining</p> <p>A Model for the Evaluation of Systematic Variabilities in the Composition and Thickness of High Sulphur-High Ash Coals</p>



YEARS IN PROGRESS/ TOTAL EST. DURATION	FY 81 FUNDS	TOTAL THROUGH FY 81
2/3	\$117,623	\$193,863
2/2	72,098	198,698
2/3	91,164	174,274
2/3	25,128	55,291
2/2	23,801	52,985
2/3	57,362	105,542
3/3	57,540	218,644
TOTAL	<hr/> \$3,836,909	<hr/> \$8,890,445

# FY 1982

## Looking Ahead

A new and important role lies ahead for the new fiscal year for OSM as the states take over surface mining activities. The new OSM will be responsive to and closely in step with reclamation practices and other technical needs for every coal producing region. In less than two years, OSM will have ended four years of restrictive policies and will have progressed to the stage where the states and coal industry can concentrate on recovering coal in environmentally acceptable ways on an economically competitive basis.

## The Director's View

In the words of OSM Director James R. Harris, "Our goals for the agency--Credibility, Cooperation and Compliance--are well on the road to realization."\*

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\*March 8, 1982; House Interior Insular Affairs Committee, Interior Energy Environmental Subcommittee.