

HEARING, APRIL 24, 1978
Legislative History
April 24, 1978 Hearing

Following is the April 24, 1978 hearing before the Senate Subcommittee on Public Lands and Resources. The text below is compiled from the Office of Surface Mining's COALEX data base, not an original printed document, and the reader is advised that coding or typographical errors could be present.

HEARING
SUBCOMMITTEE ON PUBLIC LANDS AND RESOURCES OF THE COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE
95TH CONGRESS, 2ND SESSION, APRIL 24, 1978
SERIAL No. 95-122

1 MONDAY, APRIL 24, 1978

1 U.S. SENATE, SUBCOMMITTEE ON PUBLIC LANDS AND RESOURCES, OF THE COMMITTEE ON ENERGY AND NATURAL RESOURCES, Washington, D.C.

1 The subcommittee met, pursuant to notice, at 10:10 a.m., in room 6226, Dirksen Office Building, Hon. Dale Bumpers, presiding.

1 Present: Senators Bumpers, Ford, Melcher, Hansen, and McClure.

1 Also present: Norm Williams, professional staff member.

OPENING STATEMENT OF HON. DALE BUMPERS, A U.S. SENATOR FROM THE STATE OF ARKANSAS

1 Senator BUMPERS. This is an oversight hearing to review the implementation of Public Law 95-87, the Federal Surface Mining Control and Reclamation Act. It was signed into law August 3, 1977. The Subcommittee on Public Lands and Resources of the Energy and Natural Resources Committee has oversight responsibility in this case.

1 We have invited the heads - or their representatives - of four Federal agencies which share statutory authority under the law to testify this morning regarding the problems and progress they are experiencing in carrying out their respective responsibilities.

1 We are aware of the unfortunate delay resulting from the failure to appropriate funds to the Department of the Interior for establishing the Office of Surface Mining Reclamation and Enforcement and for taking other essential actions to bring the new law into effect. On a previous occasion members of this subcommittee have questioned whether the Office of Surface Mining would be ready to enforce compliance with the performance standards within the deadlines set forth in the law. Since then, the funds have been made available, but there may be further discussion of this question today.

1 In addition to the oversight concerns, there are two bills now pending before the subcommittee which are intended to increase funding levels for the Office of Surface Mining. S. 2762

1 Senator FORD. I still remember it as 1863.

1 Senator BUMPERS [continuing]. Introduced by Senators Ford and Huddleston, would authorize increased funding for the small operator assistance program under section 401(b) of the act. The other bill was introduced by Senator Jackson on behalf of the administration, S. 2463. It would authorize increased funding for State grants and Federal interim program enforcement. We are interested in learning the Department's position on this legislation.

2 I will ask the Interior Department to lead off, followed by the Department of Agriculture, the Department of Energy, and the Council on Environmental Quality.

2 Senator Hansen.

STATEMENT OF HON. CLIFFORD P. HANSEN, A U.S. SENATOR FROM THE STATE OF WYOMING

2 Senator HANSEN. Mr. Chairman, if you wouldn't mind, I would like to make an opening statement that may possibly be of some help to the Secretary and Mr. Heine.

2 I welcome this opportunity to hear from the respective agencies the status, the problems, and implementation in Surface Mining Reclamation Act. I note that many sections are under litigation, and I have glanced at this 30-page brief - if the law is constitutional.

2 In anticipation of these hearings, I have asked several people if they have questions for you. I asked - Department of Environmental Ecology - with the agency which is enforcing an amendment to the Federal law in Wyoming. I asked the mining industry, along with the Powder River Basin Resource Council. These questions are now submitted, and answers may be provided for the record. I would hope the responses would be made promptly. I am appreciative of Mr. Heine's and Secretary Andrus' assurances that this law indeed gives the State the right and responsibility of carrying out the many purposes of the act.

2 I was happy to see Wyoming adjust its strip mining law this last session to be ready to assume this role. Wyoming may very well be the first State to have an approved program fully operational and staffed.

2 I was privileged to work closely with the late Senator from Montana, Lee Metcalf, in helping to assure that the bill reflected the State's desire to run

its own program.

2 Finally, Mr. Heine, let me repeat, has your agency gone West? Have you selected persons in decisionmaking levels who have knowledge of questions, strip mining, and reclamation?

2 Mr. Chairman, I do have a number of questions. I shall hold them until later. I appreciate the opportunity to say these words. Thank you.

2 Senator BUMPERS. Secretary Davenport, welcome back. Please proceed.

2 Ms. DAVENPORT. Thank you, sir.

2 Senator BUMPERS. Mr. Heine, why don't you go ahead and testify. and then we will take on both of you with questions.

STATEMENT OF HON. JOAN M. DAVENPORT, ASSISTANT SECRETARY FOR ENERGY AND MINERALS, DEPARTMENT OF THE INTERIOR, ACCOMPANIED BY WALTER N. HEINE, DIRECTOR, OFFICE OF SURFACE MINING

2 Ms. DAVENPORT. Thank you, Mr. Chairman. Mr. Chairman and members of the committee, I am pleased to be here with you this morning to discuss the surface mining program initiated by Public Law 95-87, the Surface Mining Control and Reclamation Act of 1977. As Assistant Secretary of the Department of the Interior for Energy and Minerals, I have general oversight of the Office of Surface Mining and its programs. I am accompanied today by Mr. Walter Heine, the Director of the Office of Surface Mining, who will present a more detailed statement of accomplishments to date. We also have key members of the Surface Mining Office with us as well as our Associate Solicitor for Surface Mining, should any legal questions arise.

3 As you know, the Surface Mining Control and Reclamation Act was signed by President Carter on August 3, 1977. The Department was active in preparing for the initiation of this new program even before enactment of the legislation. In February of 1977, we created an interdisciplinary task force within the Department to work with Congress as it considered this important legislation and to make preparations for implementation as it became apparent the bill would be enacted. Actual staffing of the Office of Surface Mining was, as the chairman has noted, delayed as funding was not available until early 1978. However, we did achieve many important steps between August 1977 and February 1978. Among these were:

3 1. The issuance of regulations for the interim program as required by section 502 of the law. These regulations were promulgated on December 13, 1977, after extensive public input and comment. A compatible set of regulations were issued by the Bureau of Indian Affairs for Indian lands also in December.

3 2. The Office of Surface Mining has had extensive discussions with all interested parties including States, industry, and public interest groups, relating to the implementation of the regulations. Public hearings were held in Denver, Colo., Charleston, W.Va., St. Louis, Mo., and Washington, D.C.

3 3. During this period of time, the Office of Surface Mining developed close working relationships with several agencies and groups throughout the country to facilitate implementation of some key provisions of the program. For example, with the aid of the Appalachian Regional Commission, the States, the Bureau of Mines, and citizens groups, we were able to compile an initial list of areas which may meet the first priority for expenditure of the Abandoned Lands Funds. We have also begun negotiations for a number of key studies, such as the Alaska study required by section 708 of the law.

3 4. The Office of Surface Mining has identified and recruited many key personnel needed to operate the program. Even though we were delayed in obtaining permanent staff, we were able to obtain the services of many individuals through loans from other agencies and departments or through consulting contracts.

3 5. The Office of Surface Mining has established working relationships with the major coal-producing States to try to facilitate the inclusion of Federal mining standards into State regulatory programs.

3 Upon receipt of our appropriations, the Office of Surface Mining has moved forward quickly and purposefully. Four Assistant Directors have been named and appointed. The first group of Federal inspectors have been recruited. These individuals have recently completed a training program at Madisonville Community College in Kentucky. We have designated the locations of our five regional offices, and the inspection personnel will be stationed in those regions. We are moving rapidly to fully staff these regional offices.

4 The Office of Surface Mining has been working closely with the States to assist them in improving their inspection capacity. More than two-thirds of the States which have coal mining have submitted applications for grants to cover the costs they will incur in applying the Federal surface mining standards. This upgraded capacity will contribute directly to the States' ability to assume

prime responsibility for design and implementation of permanent State programs for enforcement. The first grant for this purpose was awarded to North Dakota 2 weeks ago, and more grants will be awarded in the coming weeks.

4 In the abandoned lands area, we expect to be able to identify the first projects within the next weeks. We have given priority to those situations where abandoned minesites constitute serious threats to public health and safety. This is, of course, required by the legislation itself. Teams are today in the field assessing the extent of such danger and identifying the most practical means of abating it. The sites under active consideration are from the list submitted by public and private organizations.

4 The next few months will witness the buildup of the Office of Surface Mining to its approved strength. Through the able guidance and administration of Director Heine, we expect the Office to be fully operational by the end of the summer. We believe we are attracting individuals with strong management capabilities and necessary skills to effectively and efficiently implement this program.

4 The Office of Surface Mining is facing a number of key deadlines in the next year. The statute requires that the final program regulations be promulgated by August 3, 1978. Although we are making every effort to come close to this date, realistically it does not appear that we will meet it. We are actively working on those regulations and on the environmental impact statement which must accompany them through the decisionmaking process. I would expect promulgation of the final regulations in the fall.

4 While we have and will continue to make every effort to meet the dates required by the law, the lateness of our funding has retarded our efforts. Under the terms of the statute, all new mines were required to conform to the regulations promulgated in December 1977 by February 4, 1978. All existing mines are under the obligation to comply with those regulations by May 4, 1978.

4 We and the States are committed to the inspection program which will be needed to achieve compliance with those regulations. Any lateness in the promulgation of the final program would not justify delays in implementation of the interim program which, by itself, abates much damage caused by noncomplying mining practices.

4 Our implementation of title III is now progressing on an expedited schedule. We anticipate that 20 State Institutes will be designated by the end of this fiscal year and that we will have dispensed the grant moneys available to those institutes.

5 We are grateful that the Congress has given us the tools to protect our land and water from unacceptable mining practices. We are firmly committed to orderly implementation of this program securing broad public input at all appropriate phases. We are also committed to working with the States to enable them to take over primary responsibility for enforcement of the new standards. Our task is great. However, we believe the implementation of this program is vital if coal is to take its proper place in meeting our nation's energy needs.

5 Senator BUMPERS. Do any other members of the committee have opening statements? In that case, you may proceed, Mr. Heine.

5 Mr. HEINE. Thank you, Senator Bumpers. I would like to submit the complete text of my testimony for the record and summarize some of its highlights.

5 Senator BUMPERS. Mr. Heine, the microphone you are talking into is not a public mike. You have to get pretty close to the microphone to be heard.

STATEMENT OF WALTER N. HEINE, DIRECTOR, OFFICE OF SURFACE MINING, DEPARTMENT OF THE INTERIOR, ACCOMPANIED BY PAUL REEVES, RICHARD HALL, DR. DAVID MANEVAL, AND TONY HEAD, ASSISTANT DIRECTORS; AND WILLIAM EICHBAUM, ASSOCIATE SOLICITOR, OFFICE OF SURFACE MINING

5 Mr. HEINE. I have with me today four Assistant Directors, Paul Reeves, Richard Hall, Dr. David Maneval, and Tony Head. Incidentally, Senator Hansen, I know Oklahoma doesn't count as a Western State. Mr. Reeves is from Oklahoma.

5 We also have with us today William Eichbaum, who is our Associate Solicitor assigned to the Office of Surface Mining. As my statement indicates, which I am submitting for the record, we were late in getting started and have tried to make up for lost time. We analyzed our tasks and gave first priority to what we understood were the priorities of the Congress. Our initial regulatory program is now in place and should serve to reduce further damage to the land and water.

5 Our first wave of senior inspectors have been recruited and trained, and are in the field as of this morning. They are going to spend the first few weeks working in teams with State inspection officials so that the two groups of inspectors can get a better understanding of how each works and avoid frictions and misunderstandings.

5 We have worked very closely with the States in developing our regulatory programs and have made the first State grant - to North Dakota for the duties it is assuming under our initial program. More State grants will be made in the coming weeks. On the basis of newer information, we have concluded the full funding of these costs being imposed on the States will require that the funding authorization in section 712(a) of the act will have to be raised from its present \$10 million for fiscal year 1979 to \$25 million. Legislation has been introduced in both Houses of the Congress to achieve this.

6 This small operating program will be run in conformity with the congressional desire. It appears likely that we will need additional funds next year but cannot determine how much of a shortfall to expect. We suggest that the Congress wait until we have more information before increasing the authorized level of funds for this activity. The reduction of costs involved in this work will be an important goal for us.

6 Our work program provides that the Minerals Institute under title III of the Act would meet the congressional targets, We expect to be able to designate 20 such institutes and allocate all of the funds made available to us by the Congress by the end of this fiscal year.

6 Our mineland reclamation efforts are concentrated on the most serious hazards. Our evaluation teams are out in the field and will, by the end of this week, make a preliminary recommendation to OSM for a decision. We anticipate making the first firm project identification within a month or so.

6 Our relations with the States and with our sister Federal agencies are very good. I am confident that we will not have any significant gaps or duplications of effort. For example, we will believe that our program will complement the efforts of the Appalachian Regional Commission fairly well.

6 We should also be able, through the help of States, to make the best target selections to guide their share of the reclamation fees. We believe that the Office of Surface Mining, the Soil Conservation Service and the States can move forward effectively to capitalize on the opportunity to restore water and land resources injured by past mining practices. I thank you very much and will be very happy to answer your questions.

6 [The prepared statement of Mr. Heine follows:]

6 STATEMENT OF WALTER N. HEINE, DIRECTOR, OFFICE OF SURFACE MINING,
DEPARTMENT OF THE INTERIOR

6 Mr. Chairman, Members of the Committee. I am pleased to be able to be

with you today to describe how the Office of Surface Mining has proceeded thus far and our proposed future course of conduct. This presentation parallels the structure of the statute. With this format, I have singled out information pertinent to the questions which the Chairman posed to us in his letter.

6 TITLE II - ORGANIZATION OF OSM

6 Obviously, the first task before us was to organize the Office created by Section 201. As Secretary Davenport has indicated, we were late in securing permanent staff and it has been less than two months since more than the nucleus of our permanent complement has been on board. However, we did have many of our key leaders in place somewhat earlier and the buildup of staff is going reasonably smooth as a result. Many of our key people have either reported within the last month or are only now signing on. We expect to be up to full strength by early fall.

6 TITLE III - MINING AND MINERAL RESOURCES AND RESEARCH INSTITUTES

6 Title III authorizes creation of Mineral Institutes and a Research Advisory Committee. As you know, the statute identifies some members of the Advisory Committee but requires the Secretary to name four additional people, one of whom must represent working miners. We have started the process of allocating the remaining three slots, bearing in mind the de facto need to include representation from universities which have mining institutes already in operation.

7 We are actively reviewing a third draft of proposed regulations to implement the Institute program and should have them ready for the Federal Register in the next few weeks. At the same time, we are preparing a charter and procedural guideline for the Advisory Committee.

7 Our present timetable calls for these preliminary actions to be complete and the first Committee members to be selected by July 1. All Regulations and the actions of the Committee should be completed in time for OSM to designate approximately 20 institutes by September 30, 1978 and award all the grant funds we have available for this fiscal year. Our present plan calls for these institutes to concentrate on problems which are important to our program. These would include better reclamation techniques and the quest for the least expensive ways to do the hydrologic and test bore studies required for the small operators.

7 TITLE IV - RECLAMATION OF ABANDONED MINE LANDS

7 Title IV is the abandoned mine reclamation program. Funds for this program are derived from fees on coal produced after October 1, 1978. As of the

end of March, about \$3 5 million has been collected. Fifty percent of the fees are reserved for State programs in the State where they are collected, but no State reclamation plan can be approved until a State has secured approval for its enforcement program. Accordingly, these funds will not actually begin to be expended by any State until late in fiscal year 1979.

7 The remaining fifty percent of the fees is available when appropriated for various Federal programs. Thirty-six point six million has been appropriated for the current fiscal year. Five million has been allocated to the Soil Conservation Service for its use to reclaim rural lands. Ten million is available for the assistance to small operators. The balance of \$2 2 million is dedicated to inventories, fee collection and reclamation projects by the Office of Surface Mining.

7 We have canvassed the States, Federal agencies and citizens' groups for identification of abandoned sites which, in their present condition, are active hazards to public health and safety. This is our highest priority for project funds available this year. We have compiled a list of about 350 identified sites from which we have selected about 33 prime candidates. We have sent teams to some of these sites to evaluate them to determine both the dimension of the hazard and the means to abate them. Within the next three weeks, we should be announcing the first few projects we will undertake. This will start the rehabilitation phase of our work and we look forward to it.

7 In this effort, we have received the help of many of our sister Federal agencies, both within and outside the Interior Department. We have worked with the Appalachina Regional Commission so that its prime list and ours would be complementary. We are also working closely with the Corps of Engineers, the Soil Conservation Service and the EPA as well as the Geological Survey and the Bureau of Mines.

7 TITLE V - ENVIRONMENTAL REGULATORY PROGRAM

7 Title V is designed to reduce the pace of destruction of land and water by poor mining practices and ultimately to abate such undesirable practices altogether. Regulations for the initial regulatory program were published in the Federal Register last December. On December 16, the Bureau of Indian Affairs issued compatible regulations for mining operations on Indian lands. Enforcement activities are now being performed by the Geological Survey and BIA but will be transferred to OSM supervision as our staff capacity increases.

7 We have been meeting with State officials as well as with the industry and citizens groups for nearly a year so that our regulations for the initial program contain many of their suggestions and insights. We have worked closely with the agencies of State governments identified by the Governors to help them develop their own plans for inspection and enforcement. As a result we are fairly confident that the work of the Federal and State inspectors will be mutually reinforcing.

7 Our first group of Federal inspectors - the senior inspectors and the corps of supervisory inspectors - were carefully recruited and they all underwent a specially prepared training program at a community college in Madisonville, Kentucky. As of this morning, these 29 have been deployed among our five regional offices.

8 Simultaneously, many States have been giving effect to our new Regulations. Where State legislatures acted promptly, State permits issued since February 3 do include requirements of conformity with our December 13 Regulations.

8 TITLE VII - ADMINISTRATIVE AND MISCELLANEOUS - STATE GRANTS

8 By the end of March, we had applications for grants from more than two-thirds of the States where coal is mined. These applications are for the incremental costs that the States anticipate they will incur as a result of enforcement of our standards. The grants cover recruitment of additional inspectors, training for new, as well as, existing State inspection personnel, equipment and technical capacity to support the inspectors and the officials who review permit applications. The first grant was awarded to the State of North Dakota on April 13 and we anticipate additional grants fairly soon.

8 It might be more orderly to break with the approach this testimony has taken thus far and discuss the problems we have encountered with Section 712(a) of the Act which authorizes the Federal interim inspection program and grants to cover the incremental State inspection system costs. As passed, the Act authorizes ten (10) million dollars a year to support these efforts. The amount is simply inadequate for fiscal year 1979. For fiscal year 1978 by reprogramming other funds which have become available because we started later than expected and personnel was hired later than expected.

8 We have come to realize that we may be short of funds for FY 1979. The Federal inspection program will exceed 11 million dollars by itself (actually, the total cost is 13 million but 2 million can be attributed to administrative expenses which are covered by other provisions in Section 712). Back in

December, we estimated State needs and made a preliminary judgment that they could be accommodated if Section 712(a) were increased to 19 million. However, higher than anticipated grant requests from the States indicate that full funding for the State efforts may require a total sum closer to 25 million dollars: 13 million for grants. The Administration now supports an authorization increase to 25 million dollars in fiscal year 1979. We are reviewing our current budget request in light of recently received State grant applications.

8 I cannot exaggerate the importance of providing full funds to the States. We are making certain that their applications reflect only reasonable incremental costs. These are real needs and the credibility of the Federal as well as the State effort may turn on our ability to make sure that the State enforcement during the initial program is diligent and effective and serves to expedite the States' transition toward permanent program operation. Most State agencies (and we confidently expect more than 20 of the potential 26 States will participate) are dependent on these grants. Their legislatures have concluded their sessions and have not appropriated funds beyond what the State effort minus Federal grants will require. Accordingly, we support S. 2463 with an amendment to raise this sum to 25 million dollars.

8 In addition to a moral obligation for the Federal government to cover these costs to be incurred by the States, there are two additional reasons for providing adequate grants assistance. The statutory scheme provides that the States are to be the prime enforcement mechanism in the surface mining control field. The skills and adequacy of this work force will ultimately be a crucial factor in the quality of the national effort. Finally, as I indicated in my discussion of Title III, the State reclamation effort is conditioned on an adequate enforcement program. Thus, the sooner we can certify State permanent program, the sooner can we release half of the national funds dedicated to reclamation of abandoned mine lands. Accordingly, it is imperative that we provide no impediment to a State program. We should not need any change in funding levels for the initial program beyond fiscal year 1979 because several permanent programs will be in place.

8 REGULATION ON FEDERAL LANDS

8 One of the questions posed by the Chairman of this Subcommittee referred to controls on Federal lands. As we advised the Committee, mining on Federal lands is covered at this time by the initial program regulations of December 13. A further proposal amending 30CFR211 also relating to Federal lands was

published in the Federal Register. We are now considering what final form these proposals should take.

9 ALLUVIAL VALLEY FLOORS

9 The problem described in Chairman Bumpers' letter regarding Section 510 is particularly vexing. The statute calls for a trade of mining land from the Federal government to the owner of coal rights in alluvial valley floors where the mining of such coal would do major damage to the alluvial valley or interrupt intensive farming on such lands. Compounding the hydrologic and geological problems is a lawsuit which was filed prior to passage of this bill. Under the terms of the decision in Hughes v. N.R.D.C. , There is a moratorium on Federal coal leasing until a better environmental impact statement has been completed.

9 A stipulation made recently between the Department and the plaintiff in that case would allow leasing of certain Federal coal deposits to operators with rights in the alluvial valleys if the owner of those rights could have received a permit for mining. The theory of the stipulation is that the permit might be so encumbered with requirements to protect the water system that it would be more economical for the owner to develop another deposit.

9 Effectuation of this stipulation is primarily between the Bureau of Land Management and the operator-owners of coal mining rights in alluvial valleys. At such time as the Department of Interior coal environmental impact statement has been successfully concluded, we will develop procedures for implementation of the statute as passed by the Congress.

9 SMALL OPERATORS ASSISTANCE

9 The problem of small operators is a serious one and we have given careful consideration to S. 2672. The Congress clearly did not intend to leave them outside the scope of the program but, at the same time, the Congress did not want to impose onerous burdens on them. They will have to secure permits and will have to prepare mining plans. The statute provides that the regulatory authorities will absorb the costs of the hydrologic and test boring studies required to prepare the mining plan and, further, authorizes Federal funding for this purpose. We intend to honor the commitment.

9 We face the problem of not knowing how much it will cost to pay for these studies. Indeed, we do not, at this time, know how many eligible small operators there are. We know that there are about 3,000 small operations but some are associated with other operations that, in totality, make them

ineligible. Based on studies of date from Mine Safety and Health Administration and the Bureau of Mines, we are using a working estimate of about 2,500 eligible small operators. The next question is: how much will each study cost?

9 We have tried a number of scenarios to determine the range of unit costs. The Congressional Budget Office estimated that the unit cost would be about \$28,000 per small operator. Some of our estimates exceed this figure while others are significantly lower. If we can aggregate small operators in the same geological formation and in the same watershed, we can reduce the per operator cost. Another cost reduction could be achieved if some of the data could be captured from other sources such as applications from larger operators or studies done by the Geological Survey and EPA. Other techniques to lower unit costs will be a priority research effort for us.

9 It is likely that we will not be able to do all the studies for small operators within the level of funds authorized under Section 712(b) of the Act. However, availability of assistance is not critical until the State programs are within six months of probable approval stage. This means that we will have the ten million appropriated for fiscal year 1978 and added to the 10 million dollars for fiscal year 1979 available for the latter year. If there is a shortfall for fiscal year 1979, it will probably not manifest itself until the second half of fiscal year 1979, about a year from now. Before that time, we will have much better information. If additional funds are needed, we could come back to the Congress for an amendment to the authorization and a supplemental budget. We would have the advantage of knowing with certainty how much will be needed and the time frame in which additional sums are required. Accordingly, we suggest that the Committee defer action on proposed legislation to amend Section 712(b) until we have that additional information.

10 SMALL OPERATORS' EXEMPTION

10 The Chairman's letter also asks for some discussion of the end of small mine exemptions to most of the initial environmental standards on January 1, 1979. We do not think that this will have a very significant impact on the industry at that time. The statute provides that the exemption applies only to permits in effect when the statute was passed. The legislative history makes it clear that renewals of permits would not be covered by the exemption. In view of the fact that most permits are annual, there will be a small percent of all

permits in January, 1979 that will still be covered by the exemptions. Only two States, Virginia and Kentucky, took advantage of the statutory authority to extend permits by legislation and even in these cases, the dates for extension were so late that many of them had expired before the date of enactment of State statutory extension date.

10 ALASKA

10 The Alaskan study called for in the statute will be performed by the National Academy of Sciences under contract to OSM. It is a working procedure of NAS that the sponsor of a study cannot name people to the study panel. We are in the process of completing the negotiations with NAS and have recommended three people to them for the panel. These are names suggested to us by the State government. In any event, we have been assured that the NAS panel will hold public hearings in Alaska and that State and Federal officials will have an opportunity to be heard.

10 INDIAN LANDS

10 The Indian Lands study required by Section 710 has been the subject of preliminary negotiations between OSM, BIA and tribes and inter-tribal organizations to try to outline the nature and methodology of the study. We believe it to be crucial that the nature of the study be agreed upon before it is undertaken if the study is to be used for permanent regulations for mining on Indian lands. In the meantime, BIA and GS are applying the regulations issued on December 16 which are based on OSM's December 13 initial program for non-Indian lands. While this study will not be completed by this fall, I have directed by staff to make every effort to have the study results available by the beginning of the 96th Congress.

10 Titles VIII and IX are under the direction of the Department of Energy which can give the Committee more detail than we could.

10 Senator BUMPERS. Secretary Davenport, on the last page of your testimony I see where it says under the terms of the statute, all new mines were required to conform to the regulations promulgated in December 1977 by February 4, 1978.

10 Now, that was not possible, was it?

10 Ms. DAVENPORT. There are actually two answers to that question, Senator. For new mines on public lands, which the Department has to approve, we have been working with the operators to bring those mine plans into compliance with these

regulations.

10 Senator BUMPERS. But the regulations were not drafted at that time, at least they were not in any final, definitive form on February 4, were they?

10 Ms. DAVENPORT. The interim program was, sir.

10 Senator BUMPERS. They were?

10 Ms. DAVENPORT. The interim program. Our first set of regulations were promulgated in December. Those include the first standards required by the act and where we have an approval responsibility for mines on public lands, we have been working with the operators to include those standards in mine plans. Elsewhere, since we haven't had inspectors in the field, we don't know how many new mines comply. I would like to make one point. The implementation date in the statute has two separate effects. First, it clearly signals the date on which all operators know they must comply with certain standards. Second, it should have been the time OSM would have had its inspection force in the field, but we didn't because of the appropriations process.

11 The fact that the establishment of an inspection force is late means that new mines have had a grace period between February 4 and today, and probably a few more weeks, before being inspected to see if they met their obligation, which was their obligation on February 4.

11 Senator BUMPERS. How much grant money are you going to have to give out to these institutes? You state here in your statement: We anticipate the 20 State institutes will be designated by the end of this fiscal year and that we will have dispensed the grant moneys available to those institutes.

11 Mr. HEINE. The total for this fiscal year 1978 is \$5 .4 million. For the 20 institutes, that comes to \$270,000 each.

11 Senator BUMPERS. What are we going to get for that?

11 Mr. HEINE. For that we hope to get, first, the establishment of a mining institute. The funds must be matched by the institute, by the university, to set up a group of persons that are expert in mining and who undertake mine research that is pertinent to our program. Second, fellowships and scholarships will be made available to deserving students to get more persons into the mining and into the energy field.

11 Senator BUMPERS. Will your office determine what kinds of research these institutes are to undertake?

11 Mr. HEINE. There is an advisory committee established by the act that is to guide the research. However, we will basically be the persons who determine the type of research. We think it is very important that we get very specific research that will assist us in the promulgation of regulations and get the high technology necessary to get this program going forward.

11 Senator BUMPERS. Secretary Davenport, you mentioned five regional offices. Where are those regional offices going to be set up?

11 Ms. DAVENPORT. Let me see.

11 Senator BUMPERS. Are these offices of the Office of Surface Mining?

11 Ms. DAVENPORT. They are regional offices of the Office of Surface Mining. They will be located in Charleston, W.Va.; Knoxville, Tenn.; Indianapolis, Ind.; Kansas City, Mo.; and Denver, Colo.

11 The regional offices were chosen both by the number of mines which fall under regulation and the number of States in each area that are considered major coal producing States. There will be a series of district offices at which inspectors will be stationed. But that is the next step of staffing output.

11 Senator BUMPERS. How far is it from Kansas City to Denver and what is the distance between those two cities?

11 Does anyone here know? They are rather close, aren't they?

11 Senator FORD. I think it is only 100 miles.

11 Senator BUMPERS. What area would Kansas City serve, would it include Illinois?

11 Ms. DAVENPORT. Kansas City serves Missouri, Oklahoma, Iowa, Arkansas, Louisiana, Kansas, Oklahoma, and Texas.

12 Senator BUMPERS. Why don't you submit a map to the members of the committee, showing the area that each regional office is designed to serve.

12 Is that all right with everyone?

12 Senator MELCHER. I think they have a map right there.

12 Senator BUMPERS. Oh, you have a map?

12 Ms. DAVENPORT. We will submit that to you by this afternoon.

12 [The map referred to follows:] [SEE ILLUSTRATION IN ORIGINAL]

12 Senator BUMPERS. What is the total appropriations you have received so

far for your office, \$10 million?

12 Mr. HEINE. The Office of Surface Mining has a total of \$6 7.5 million appropriated.

12 Senator BUMPERS. Appropriated?

12 Mr. HEINE. That is correct. That was for 1978. This includes about \$3 6.6 million for the abandoned mine reclamation fund. It also of course includes moneys for grants to States.

12 Senator BUMPERS. How much of that is for administration, operation of the office?

12 Mr. HEINE. I am informed that it is about \$6 million for administration.

12 Senator BUMPERS. How much?

12 Mr. HEINE. \$6 million.

12 Senator BUMPERS. Why was this funding delayed?

12 Mr. HEINE. It was delayed because it was part of a supplemental appropriations bill which included primarily -

12 Senator BUMPERS. It was part of what?

12 Mr. HEINE. A supplemental appropriations bill which included the B-1 bomber, primarily, and the Clinch River Breeder Reactor, and such other "noncontroversial" things.

12 Senator BUMPERS. Senator Hansen.

13 Senator HANSEN. Thank you, Mr. Chairman. I have some statements and some questions, if I may, just to let me read through them, and then I will submit them to you, Secretary Davenport, and Mr. Heine. And I think it might be helpful for you to have them and then provide answers for the record. Our first concern is the Surface Mining Control and Reclamation Act - talks about regulation of mining and reclamation of all Federal lands. There are currently other reclamation requirements found in regulations promulgated by the 1920 Mineral Leasing Act. It is necessary to determine whether the 1977 act supersedes all previous attempts to regulate mining and reclamation wherever those matters are addressed in the 1977 act; specifically, when will the final regulation for the permanent regulatory program be promulgated.

13 Section 523 of the Surface Mining Control and Reclamation Act requires that a secretary promulgate regulations for the development of a Federal lands

program by August 3, 1978. By that time, the State of Wyoming will be operating an interim regulatory program which will also be addressing itself to Federal lands.

13 The question of Wyoming is whether, upon promulgation of the regulations

for implementation of the Federal lands program, the Office of Surface Mining intends to supersede the regulation of those Federal lands being done by the State of Wyoming.

13 The position of the State of Wyoming is that once we are regulating Federal lands under an interim program, we should also be allowed to continue to regulate those Federal lands even after promulgation of the Federal lands regulations until the Secretary's office determines that, while this program does not adequately enforce the Surface Mining Control and Reclamation Act, the use of the Abandoned Mine Reclamation Fund, title IV of the act, is regulated in the act by a set of priorities. Section 40232 of the act seems to pose an obstacle to the State's exercising flexibility and using these funds in the areas where the most serious impact from mining is felt.

13 In Wyoming, the most serious need is to provide construction of public facilities in the areas impacted by full development. The question is: Will the Office of Surface Mining work with the State in applying the act and the funds available under it to address the most serious problems facing the State? Second: What kind of regulations or guidelines are being developed by the Office of Surface Mining in order that such a flexible policy can be implemented?

13 With respect to section 510B5A on the alluvial valley floors, what specifically are the undeveloped rangelands which are not significant to farm and what specifically is of such small acreage as to be of negligible impact on the farms' agricultural production?

13 With respect to section 515, they can ask: Are the quotas essential for our hydrological functions to be preserved, relating to agricultural activities, geology or alluvial systems?

13 With respect to section 515E, in some cases, leaving the high wall in part will result in less surface disturbance and provide additional wildlife habitat. Can a provision be provided for a variance to permit leaving part of a high wall, when justified as more desirable, for reclamation?

14 And with respect to section 515E20, liability for revegetation for 10 years seems to me to be totally unreasonable in most cases. Can a variance to 5

years be provided when justified?

14 With respect to 701, alluvial valley floors have not been defined precisely enough to prevent its application to areas that Congress did not intend to be included. Miner - which are dry most of the year have been proposed for inclusion by Federal agencies. Can this definition be clarified to describe exactly what was intended by Congress?

14 And with respect to section 701 again, a precise definition of subirrigation is needed. This term has been interpreted by some Federal employees to include the driest desert that has a flat on it. This is totally ridiculous. Can a definition be provided?

14 A suitable definition may be as follows: Subirrigation means irrigation of plants with water delivered to the roots from underneath. The source of this water is from stream/lake deposits which are semisaturated or saturated with water derived from the stream to an extent that the plants are able to maintain growth through most of the growing season without depending upon precipitation except indirectly through stream recharge. I will submit those questions to our distinguished participants, Mr. Chairman, and I should think maybe if they would at an appropriate time have their answers to me included in the hearing record it will be helpful.

14 Ms. DAVENPORT. Senator Hansen, one, I would compliment the person who drew up those questions because some of them are the toughest and most difficult questions we are facing. For some of them, we can get answers to you by the close of this record.

14 On the other hand, for example, we have a technical committee working to more precisely define alluvial valley floors and to produce a guidance document to be used by both Federal agencies and State agencies. I don't expect that that document will be complete by the time this record is closed. However, as soon as it is complete, we will be very happy to submit it to you and to the chairman and other members if they desire.

14 Senator HANSEN. Thank you very much, Secretary Davenport. If I may, let me say to you and Mr. Heine I have a number of other questions I would like to submit for the record. And instead of taking time this morning to pursue those questions, I will hand them to you and, hopefully, you may be able to provide answers for the record.

14 Thank you, Mr. Chairman.

14 [The document referred to follows:]

14 [340-01]

14 Title 7 - Agriculture

14 SUBTITLE A - OFFICE OF THE SECRETARY

14 PART 2 - DELEGATION OF AUTHORITY BY THE SECRETARY OF AGRICULTURE AND
GENERAL OFFICERS OF THE DEPARTMENT

14 Surface mining control and reclamation; implementation

14 Agency: Office of the Secretary, USDA.

14 Action: Final rule.

14 Summary: This rule concerns the delegation of authority of the Secretary relating to his responsibilities in the implementation of the Surface Mining Control and Reclamation Act of 1977, to the Assistant Secretary of Agriculture for Conservation, Research and Education. This rule also contains a redelegation to the Administrator, Soil Conservation Service to administer the Abandoned Mine Reclamation Program for Rural Lands and certain other responsibilities assigned under the Surface Mining Control and Reclamation Act of 1977, except as to certain responsibilities assigned to the Forest Service and the Agricultural Research Service.

15 Effective date: October 13, 1977.

15 For further information contact: Victor H. Barry, Deputy Administrator for Programs, Soil Conservation Service, USDA, Washington, D.C. 20250, (202-447-7245), or Bob Bergland, Secretary of Agriculture, Washington, D.C. 20250.

15 Supplementary information: On August 3, 1977, President Carter signed the Surface Mining Control and Reclamation Act of 1977. (Pub.L. 95-87, 91 Stat. 445). This act, among other things, directs the Secretary of Agriculture to take certain actions relating to the control of surface mining and surface mined areas in the United States. This rule provides the delegation of responsibilities to administer the Abandoned Mine Reclamation Program for Rural Lands and other responsibilities of the Secretary of Agriculture under the Act.

15 The signature of the Secretary of Agriculture appearing hereunder is approval of the delegation in 7 CFR 2.19(j). The signature of the Assistant Secretary for Conservation, Research and Education is approval of the redelegation in 7 CFR 2.62(a)(9).

15 Dated: September 23, 1977.

15 BOB BERGLAND, Secretary of Agriculture.

15 M. R. CUTLER, Assistant Secretary of Agriculture for Conservation, Research and Education.

15 September 21, 1977.

15 1. Section 2.19 is amended by adding paragraph (j) as follows:

15 @ 2.19 Delegations of authority to the Assistant Secretary for Conservation, Research, and Education.

15 (j) Related to Surface Mining Control and Reclamation, Administer responsibilities and functions assigned under the Surface Mining Control and Reclamation Act of 1977, Pub.L. 95-87, 91 Stat. 445 to the Secretary of Agriculture.

15 2. Section 2.62(a) is amended by adding paragraph (a)(9) as follows:

15 @ 2.62 Administrator, Soil Conservation Service.

15 (a) * * *

15 (9) Administer Abandoned Mine Reclamation Program for Rural Lands and other responsibilities assigned under the Surface Mining Control and Reclamation Act of 1977, Pub.L. 95-87, 91 Stat. 445 except as to responsibilities assigned to the Forest Service and the Agricultural Research Service.

15 [FR Doc. 77-29943 Filed 10-12-77; 8:45 am]

15 Senator BUMPERS. Senator Ford.

15 Senator FORD. I notice that both of you are included - in your prepared statements, that both of you excluded the inability to arrive at the permanent regulations on August 3.

15 What impact will this have on the ability of States to submit their plans for State programs to the Secretary if your permanent regulations cannot be published by the required time of August 3?

15 Either can answer. I think both of my questions will be directed to both of you.

15 Mr. HEINE. Senator Ford

15 Senator FORD. Is this doctor

15 Mr. HEINE. This is William Eichbaum. He is our associate solicitor.

15 Senator FORD. Any help you can get is all right with me.

15 Mr. EICHBAUM. Senator, this is a difficult area.

16 Senator FORD. It is difficult on the other end, too.

16 Mr. EICHBAUM. That is true. I will assume that we will miss the date.
Then the question is -

16 Senator FORD. Well, both of the participants - I guess your bosses said
you would miss the date.

16 Mr. EICHBAUM. The major problem there is to try and leave adequate
time
in the time frame the Congress set for the States to go through the process
of
enacting legislation and whatever work they may have to do. I think - and we
have preliminarily studied this - that we can, through rulemaking and I
think,
obviously, appropriate consultation with the Congress, reflect in that
rulemaking additional time frames so that the States are able to have the
amount
of time that they would have had if we had hit August 3 precisely.

16 Senator FORD. What happens to those who are trying to solve the coal
in
that time frame? Do you just go back to the interim standards? You don't
have
any permanent standards? What happened to them?

16 They are standing out there in a state of limbo, you know.

16 Mr. EICHBAUM. The way the statute is worded, is that the interim
program
continues in a State until the State has either received approval for status
as
a regulatory authority, at which time then it would implement the permanent
standards.

16 If that never happens, then the Federal Government would come in and
implement the permanent standards. So there is a contemplation that there
would
be as much as 30 months - 28 months I guess, but the interim program would
remain in effect and it is a function of how quickly a State acts.

16 Senator FORD. There is no way for a State to act, until such time as
the
permanent regulations are published, is there?

16 Mr. EICHBAUM. I think that is right although the schedule that we are
working on will have a draft fairly well out to the States this summer and to
other people, that would be the kind of draft that States could begin to
design,

whatever legislative changes they had to make this fall, so that they could move to their legislatures in early 1979 with a caveat that there would be a possibility of some last-minute adjustments late in 1978, if the final regs did not reflect that proposal for the summer.

16 Senator FORD. To August 3. It will not be met according to the testimony by the two witnesses this morning. Until such time you are just going to send out a proposed list of rules. Then the State is supposed to start adjusting or getting prepared.

16 When do you think the permanent regulations will be published?

16 Mr. HEINE. It appears, based upon a schedule we have now formed, that we will now be about 11 weeks late, to be precise.

16 Senator FORD. About 11 weeks late. So that is roughly 12 weeks and - is 3 months. In August plus 3

16 Mr. HEINE. About the first of November, I guess.

16 Senator FORD. It seems to me that the delay of the promulgation of permanent regulations will severely impact the ability of the State to submit State programs in the time required by the Act. I guess there is really no way to solve the problem. If I understood your assistant right, the interim regulations would apply until such time as permanent regulations.

17 If you are 11 or 12 weeks late, you are extending the time of the State to comply or do they still have to comply within the statutory limit?

17 Mr. EICHBAUM. The State does not have to implement the permanent regulatory program and operators don't have to follow the permanent program until such time as a State is approved as the regulatory authority.

17 Senator FORD. Or turned down.

17 Mr. EICHBAUM. Or turned down. So there could be an 11- or 12-week shift in what that date would be and that would just result in the interim regulatory program being, in fact, an additional 11 or 12 weeks.

17 Senator FORD. Can you inform the committee as to which State, in your opinion, will be able to gain the Secretary's approval of State programs and which States will likely have Federal programs imposed as a result of failure to meet statutory regulatory requirements for State programs?

17 Ms. DAVENPORT. Senator, at this time, we hope that all major

coal-producing States will take the Federal program. We are still optimistic. As we get further down the line into this 30-month period, we may reassess that. But we certainly have the strongest commitment and, again, whatever assistance and aid is necessary to the States to have them take over the primary enforcement for this program.

17 Senator FORD. Let's look at another problem that a lot of you face. I believe it was late March - or maybe the early part of April - I think it was in late March when the President signed the Executive Order 12044, entitled "Improving Government Regulations."

17 Are you aware of that?

17 Ms. DAVENPORT. Yes, sir.

17 Senator FORD. With this aim - and I support it firmly - at simplifying regulations and in reducing their burden on the American public, would you tell us what the Office of Surface Mining plans and procedures are for complying with this Executive order and the promulgation of the final, permanent regulations?

17 Mr. HEINE. Yes, Senator. We have on board at the present time persons who are working with our regulation writers. There are two teams who are working with our regulation writers.

17 One, they are conducting the regulatory analysis which used to be called economic impact statement, which is aligned with the President's announcement.

17 In addition, we have an environmental impact group that is also working with our regulation writers as the regulations are written. This is also required by Federal law. The important thing is that both of these two teams working with our regulations writers are and will continue to look at alternatives as each regulation is written, to see that best alternative, both from a cost standpoint and from environmental protection standpoint, is included in the regulation:

17 We think that is the intent of the President's message, and we think that it is very important.

17 Senator FORD. How do you plan to comply with the Executive order's requirement - I believe it says the public will be afforded at least 60 days to comment on the regulations.

18 Won't that extend it an additional 60 days or could it extend it an additional 60 days if you comply with that?

18 Mr. HEINE. We have that all worked into the schedule that I gave you.

18 Senator FORD. That is the 11-weeks schedule?

18 Mr. HEINE. That is correct. We intend to have, not only public hearings on the published draft of the regulations

18 Senator FORD. Where are you going to have the public hearings, here in Washington?

18 Mr. HEINE. We will have them and I would judge at this point that they will be in Denver, Charleston, Kansas City, and Washington. I believe that is what we did in our interim regulations. So there will not only be public hearings at the time the regulations are drafted and in the Federal Register. In addition we will attempt to have a seminar, which may be a 1- or 2-week seminar, allowing persons from the outside to come in and participate in the rulemaking process, to give us guidance on drafting regulations.

18 Senator FORD. Is that section 3 where you have the public in? Is that section 3? Maybe section 3 is the one that requires the regulatory analysis of the regulations. I think more specifically it is the compliance with the procedure. So I guess what you are saying to me is you have already plowed that time for a procedural effort as it relates to public comment on regulatory analysis.

18 Mr. HEINE. That is correct.

18 Senator FORD. I just have a couple of more questions, Mr. Chairman. For Senator Huddleston I have a bill which we are discussing today, S. 2672. And your testimony indicates that you are working on an estimate of about 2,500 small operators that will be eligible for assistance in the preparation of mine plans. That is in your statement I think. I had the 100,000 operator exemption amendment on the floor May 20 of last year. It was strongly opposed by members of this committee who used these figures on me, I think.

18 It would cover 23 percent of the production and 83 percent of the mines. Do you believe that your 2,500 estimate is realistic? The figures that were used in opposition to my amendment was one thing, and then your estimate today indicates it is somewhat less. It is so much smaller.

18 Mr. HEINE. The estimate that we have in the opening statement is based upon data that the Mining Enforcement Safety Administration, which now has had its name changed, MESA's information to us, as well as some data that we have gotten from the Bureau of Mines.

18 The weakness in the data, Senator, is that we suspect that the number of small operators that would qualify will actually be smaller than that because we are finding there are some small operators who are affiliated with larger corporations and larger companies, so therefore they really would not qualify.

18 Senator FORD. And some of them just give up. They just go out of business.

18 Mr. HEINE. Though at the present time we admit that the 2,500 figure for a number of small operators is just an estimate. But it is the best we have at this time.

19 Senator FORD. You say in your statement that \$10 million carryover from fiscal 1978 plus the \$10 million for fiscal 1979 probably - that is the word you use - probably will be sufficient. If not - and I think I quote reasonably from your statement - additional authorization could be requested late in fiscal 1979. Now, let me ask you this question: Why not pass the authorization now set down in Senator Huddleston's bill and mine, 2672, and handle the appropriations later if you need them?

19 Mr. HEINE. I think I would have very little argument with that logic.

19 Senator FORD. While I am on a positive note, I think I will move on. In your statement before Congress last year you stated that Federal law, in your opinion, would in no way inhibit coal production.

19 Do you still feel that this could be achieved?

19 Mr. HEINE. I am sure that there will be a transition period as there always has been when a State law is passed or any law that regulates somebody. There is a period of confusion and gearing up, and as you are aware, there can be a temporary slowdown, in this case, of coal production. It may be hard to measure that or separate it from losses of production because of other reasons.

19 I think - and I continue to think - that over the long run, within several years, if not less than that, production will be normal.

19 Senator FORD. What is several years, a bunch?

19 Mr. HEINE. Once the permanent program is in effect, a great number of

questions that are now puzzling miners and others, and ourselves, will be answered. And once the road is cleared by having permanent enforcement programs in States, then I think everyone will understand better what his obligations are and the companies will be able to proceed rapidly to keep up volume.

19 Senator FORD. You made a statement awhile ago that the new economic impact statement had a new name called economic analysis.

19 Is that what you said?

19 Mr. HEINE. Regulatory analysis.

19 Senator FORD. The Office of Surface Mining and the Department of the Interior has determined at various times that the economic impact statement was not necessary, that the rules and regulations are not inflationary.

19 Do you feel today that the rules and regulations are still not inflationary and the Office of Surface Mining should not have to prepare an economic impact statement?

19 Mr. HEINE. I think the best way to answer that, Senator, is that we are conducting the regulatory analysis or the economic analysis.

19 Senator FORD. You are conducting it.

19 Mr. HEINE. We are conducting it, and we think that good management practice dictates we do that, whether or not we had a Presidential directive to do so. It was in the interim program where we made a determination that we did not think that economic assessment was necessary. But we are doing it now for the permanent program, and we think it will be very helpful to us.

19 Senator FORD. What about the inflationary effect?

19 Mr. HEINE. I frankly am not much of an economist. I think I would have a difficult time explaining whether or not - how inflationary this will be.

20 Will it be lost in many of the other matters that affect coal products? I think the studies that have been done up to now, as you probably know, have a broader range of costs.

20 Senator FORD. Let's get down to the rules and regulations. I am not talking about transportation and other things. I am talking about the regulations that are required for that operation.

20 Now, up until today, the statements have been that the rules and regulations would not be inflationary. Now you are saying there are so many things you can't tell whether it is or not. But it looks like the cost to the operator would be something you could determine because you are the fellows who

set the regulations. There will be a difference in what he has been doing and what he will be doing.

20 Is there a cost? Will it be inflationary?

20 Mr. HEINE. I think there certainly will be a cost associated with complying with the act.

20 Senator FORD. So there will be an inflationary cost, and the consumer can expect to pay more for his coal as the result of the regulations.

20 Mr. HEINE. There will be some cost.

20 Senator FORD. One question that has been brought to my attention. I think maybe we ought to get it out today if we can and solve it for our friends in West Virginia. You may be aware of this. The law and regulations require that construction work be in accordance with the plans designed by professional engineers.

20 My staff has conferred several times with the West Virginia surveyors in which State surveyors for some time think they have been licensed to do this work. We have also heard from those two Senators about this matter. It does appear that, after looking at what they are doing and what the law says, that an injustice probably has been done. Hopefully, you can correct it, or maybe we need to correct it.

20 What is your reaction to adding the eligibility coverage - I believe it is sections 507 and 515 - to the effect that "these professionals registered, tested, and licensed to perform such services in the State or States where a permit is being applied for"?

20 Could you buy that sort of inclusion into the bill?

20 Mr. HEINE. I would have to look at that language. It is very hard to envision what that all means off the top of my head.

20 Senator FORD. Well, surveyors have been used. And these professionals are registered, tested, and licensed to perform such services in the State or States. I am just trying to find language, though the State has apparently been doing a pretty decent job like West Virginia - and these people are part of that continuing improvement over there - that we should not exclude them from the ability to be used and their profession to be called upon in the reclamation process and the design phase, and so on.

20 Can you give me an answer on that so that we might get it in this record for that question? It doesn't have to be today.

20 Mr. HEINE. Oh, certainly.

20 Senator FORD. So we can get it for the record before the record closes.

20 Mr. HEINE. Yes, certainly, Senator.

21 Senator FORD. I think that we did them an injustice. I have several other questions, Mr. Heine, that I want to submit to you for the record.

21 Regulations require mandatory Federal inspection of every surface mine twice a year beginning May 3. I don't know how many surface mines there are in this country, but I have good information that there are about 4,000 active mines in Kentucky alone, and we know that with 29 inspectors you are not going to get close to that twice a year beginning May 3.

21 Is there any time frame in which you can tell us when you would be in a position to inspect the mines twice a year?

21 Mr. HEINE. We hope by the end of the fiscal year - that will be by the end of September - that we will have most of our inspection crews in the field. And those numbers were developed with the intent of making that mandate of two inspections per year plus inspections resulting from complaints of citizens.

21 So it should be in late fall, Senator, I think we should be making that frequency.

21 Senator FORD. What about your acceptance of State inspectors if they become the regulatory agency?

21 Will they be doing inspections in lieu of Federal inspectors, or are we expecting Federal inspectors - that is, State inspectors - also to be on the site at various times?

21 Mr. HEINE. During the interim program, we are relying very heavily upon State inspectors and, of course, as you know, that is why there is a provision in the act to reimburse the States for gearing up their programs during the initial program.

21 And, as I have indicated in my testimony, in the beginning, our inspectors will be in fact going out with the State inspectors to become acquainted with the operators and the territory. So we will expect the States to continue their enforcement work as well as we will. Then, of course, once the permanent programs are approved in each State, then we will proceed to an oversight mode.

21 Senator FORD. Will there be any monitoring by your agency as small operators go out of business as a result of regulations?

21 Mr. HEINE. We haven't formally proposed anything of that nature. It is difficult to determine exactly why someone went out of business.

21 Senator FORD. They could just say because of regulations I have gone out of business. That ain't necessarily so, I understand, but you might want to monitor that a little bit. You might give it some consideration.

21 How many small operators' exemptions have been filed with your office?

21 How many have been processed, and how many have been approved?

21 Mr. HEINE. Senator, Richard Hall, our Assistant Director for Enforcement, can properly respond to that best.

21 Senator FORD. All right.

21 Mr. HALL. Senator, about between 1,100 and 1,200 have been received. I would like to - rather than give you estimates of the numbers because I was out of town last week training these inspectors - I would like to supply the exact number to the staff if I may.

22 Senator FORD. Do you have a ball-park figure now and an exact figure later?

22 Mr. HALL. About 50 percent have been or are about to be rejected. The rest will be either approved, or will be, or are pending further information. The numbers are not complete, and we have not received full reports from the operators.

22 Senator FORD. There was no desire on my part to have companies split up so they could get into the 100,000 or less. And I want very close scrutiny. Will the 50 percent that you will deny be in that category?

22 Mr. HALL. No. A very small percentage are in the category that you just mentioned. Most of them are because they are operating on permits issued after the date of enactment.

22 Senator FORD. I just wanted to make that point. I read somewhere in a news report that the fraudulent applications for small operators - so you were telling me that a very, very small percentage of that falls under your denials and that your denials will not fall in that category.

22 Mr. HALL. So far that is correct.

22 Senator FORD. Of the 1,200.

22 Mr. HALL. That is correct.

22 Senator FORD. Thank you very much.

22 Senator Melcher.

22 Senator MELCHER. Most of the responsibility in the act deals with strip mining. Isn't that correct?

22 Mr. HEINE. Yes.

22 Senator MELCHER. But we do have some involvement in underground mining.

22 Mr. HEINE. Yes; surface effects of underground mining.

22 Senator MELCHER. But 90 percent of the act and 90 percent of your responsibility is for strip mining. Is that correct?

22 Mr. HEINE. I don't know about the percentage exactly. I am not quite clear how you are trying to separate them. I could respond better if I understand what you mean.

22 Senator MELCHER. You are going to have to develop - what? How many inspectors are you going to have designated to look at underground mining?

22 Mr. HEINE. What we will be looking at, sir, is not entering the underground mines.

22 Senator MELCHER. I understand that, but I am trying to find out whether you think strip mining is overwhelmingly the responsibility under your program.

22 Mr. HEINE. We would say that our total responsibility would roughly follow the review because of the number of underground mines and the number of surface mines. So I guess the correct answer to your question is that, since there are a lot more individual surface mines, it has to move in that direction.

22 Senator MELCHER. You are not going to go underground, I expect. Isn't the inspection almost all the inspection that you have to do to fulfill most of the titles of the act? Doesn't that have to do with surface mines, strip mines?

23 Mr. HEINE. Yes. But in the surface effects - I just want to make it clear that in the surface effects of deep mining where there would be coal refuse piles and discharges of deep mines and other surface effects, this will

require some work. But I agree with your statement.

23 Senator MELCHER. The last I knew, about 50-50 of our coal production, 50 percent of our coal production, was strip mining. Is that still about right?

23 Mr. HEINE. I think the surface mining is higher now. It is slightly higher.

23 Senator MELCHER. Slightly higher. The last time I talked to you, Joan, we were talking about the hung-up appropriation. Now, I find that you have set up a series of offices. It is my understanding that the Colorado Basin has more of a coal reserve by far than any other coal.

23 Is that correct, or have we found some more coal reserves?

23 Ms. DAVENPORT. No, Senator, that is correct.

23 Senator MELCHER. The last figure that I relied on for coal reserve in Montana was 106 billion tons which, if using the same criteria that was used by the USDS at that time, was about 20 to 25 percent of the total reserves of the United States. I have seen some figures since then that seem to indicate that we have 200 billion tons of coal in Montana. Now, I would assume that if that latter figure is correct, then the criteria that was used would show that we have more than 450 billion tons or 500 billion tons of reserve in the United States.

23 Our neighbor to the south of us, Wyoming, has a big part of the Powder River Basin, the Powder River Reserve. And our neighbor to the east of us, North Dakota, has another significant part of the Powder River Basin.

23 Now, if the responsibility under this act and the reason for your office being in place is primarily to regulate strip mining of coal, how do we arrive at a situation where the regional office to serve this vast area, the greatest coal reserve we have in the United States, and the district office to serve this vast area, is in what many of us consider in my part of the country a remote city, a nice city but remote from us, called Denver?

23 Ms. DAVENPORT. Senator, let me make a few comments and then ask Director Heine to elaborate. In establishing regional cities, we are required to present a justification for deviating from the standard regional cities. I concur with you that much of our future mining will be done in the Powder River Basin. The

trend which Director Heine mentioned - and it appears to be a trend, is largely in the West. In setting up the regional offices, we reviewed each regional office as to the location, the distance and the number of mines which would have to be covered by that regional office. At that time, we did not feel that we could request an alternate site from the standardized region. But perhaps Director Heine can add to that.

23 Mr. HEINE. Senator, I have some statistics here which were partially used, at least, in determining where that regional office should be. Denver is the normal location for the Federal office. Colorado has about 39 mines of the surface type - and this is purely mines, not production; I will grant you that - Wyoming and Montana combined have about 35 mines.

24 In addition, of course, there are some 38 deep mines located in Colorado - excuse me, more like 50, 50 out of the 54 deep mines. So looking at the overall problem of inspecting and how often to inspect and how to reach these mines, it was the number of mines that was largely determinant, as opposed to the production of mines.

24 Senator MELCHER. I hate to respond abruptly, but I don't think that in any way bears on the question, I mean your response. First of all, I get a response that we have to go wherever the regional center is, unless we deviate. I don't know who has imposed these very rigid standards around here, but I am not aware of them being that rigid. I want to point out that you have got five areas, five regions, and one of those regions has apparently about four times the amount of coal in it that the other four have, or at least three of the other four have.

24 It doesn't make any sense to me. Now, I don't want to spend my time here in Congress having to lobby agency people to please, please, look at our area to locate some of your employees. What I want to do is see an agency, especially a new one that comes along, who has commonsense in the location of their activities.

24 I would hope that before we have another oversight hearing on this, a year from now, we will see something located in the Powder River Basin. And if we are really going to have a balance in how this office works, I might point out that, while I don't think there is much production in North Dakota at present, that it is very difficult to reach North Dakota from Denver. I am saying that hopefully to remind you that you will have some balance a year from now in where these offices are located.

24 One of the responsibilities under the act is to have an Indian lands study. Mr. Heine, you have referred to that and told us, as I knew would be the case - and this isn't your fault - but I don't know how you, Joan, or Walter, either one, could do anything without any money on this Indian lands study. You got your money when, March or was it February?

24 Mr. HEINE. March.

24 Senator MELCHER. At what stage are you in this study?

24 Mr. HEINE. We have been talking to the tribal organizations, specifically the Council on Energy Research Tribes, that has CERT as their acronym. This is to carry out the study so as to provide -

24 Senator MELCHER. When were they formed? When was that organization formed?

24 Mr. HEINE. About 2 years ago.

24 Senator MELCHER. Two years ago?

24 Mr. HEINE. Yes.

24 Senator MELCHER. Peter MacDonald is heading it up, isn't he?

24 Mr. HEINE He is their chairman.

24 Senator MELCHER. Do you have list of the tribes that are involved?

24 Mr. HEINE. We can get that to you, sir.

24 Senator MELCHER. As far as many of the tribes are concerned in our area - and that would include our neighboring State of Wyoming - it is extremely important that Indian tribes should be developed. some that want to be developed, such as the northern Cheyennes and the - are looking at some development on their reservation. And their reservations are joined, they are neighbors. What do you envision to do beyond talking to the tribes in this organization?

25 Mr. HEINE. Carl Close, who is our acting director in that area, is sitting right next to me. I think he could get into that much quicker than I could.

25 Senator MELCHER. All right, Carl.

25 Mr. CLOSE. In addition to talking with CERT, we have also had extensive contacts with the northern Cheyenne and with several other major tribes. It is our hope to have direct input from them, perhaps either through subcontracting with them or working with them directly and have them prepare portions of the

study, including their own assessment of the best way to regulate on their own tribal lands, their capabilities and other matters which are particularly important to those major tribes.

25 Senator MELCHER. How much money have you got for a grant to a tribe, to all the tribes?

25 Mr. CLOSE. We have a total of \$7 00,000 available for all the tribes. We have not yet attempted to split it up among individual tribes.

25 Senator MELCHER. That won't go very far.

25 Mr. CLOSE. We suspect it will be sufficient for the study but of course

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25 Senator MELCHER. The \$700,000 is just for the tribes.

25 Mr. CLOSE. It is to cover the total cost of the study and could cover some internal policies. At this time, we have reserved it for the tribes.

25 Senator MELCHER. You have reserved the full \$7 00,000. There is no way - I think the bill said you were supposed to get that done in a year, right?

25 Did the act give you more than a year or not?

25 Mr. CLOSE. It didn't even give us that much time. It actually said January 1, 1978.

25 Ms. DAVENPORT. Excuse me, Senator.

25 Senator MELCHER. Well, we were already late.

25 Ms. DAVENPORT. Mr. Hatuey may want to correct me, but Congress discussed the date of January 1979, but when the bill was printed it came out "1978."

25 Senator MELCHER. The point is you can't complete the study as of this year. You could complete it by January 1, 1979 if there is much of a study.

25 Mr. CLOSE. We believe we can complete it by January 1.

25 Senator MELCHER. Is hate to pass judgment in advance, but I would be very skeptical that that is a very balanced study between now and the end of the year.

25 Are you thinking of contracting out any portion of this?

25 Mr. CLOSE. Yes. in fact, we had planned to contract with the tribes. That would be how we intend to give them the money.

25 Senator MELCHER. You mean that \$700,000?

25 Mr. CLOSE. Yes, sir.

25 Senator MELCHER. You would contract individually with them or is some entrepreneur going to band together about six tribes, and it would be a major portion of that?

26 Mr. CLOSE. We are looking at several options right now.

26 Senator MELCHER. I want you to keep me advised of all those options and particularly anybody who is asking you to be considered for those contracts.

26 Mr. CLOSE. Yes, sir.

26 Senator MELCHER. Would that be possible?

26 Mr. CLOSE. Yes.

26 Senator MELCHER. Walter, you said something that this would be a good study, that these are going to become permanent regulations. My understanding of the bill - and I don't understand this section of it quite well - this study is not to be anything but a recommendation to Congress for further legislation.

26 Is that correct?

26 Mr. HEINE. That is correct.

26 Senator MELCHER. So no regulation will come from this at all.

26 Mr. HEINE. That is correct, sir.

26 Senator MELCHER. Frankly, we are a long way from an understanding with most of the tribes. There are exceptions. But most of the tribes in Wyoming and Montana are a long way from accepting just what type of reclamation program they want on a particular reservation.

26 Do you find that to be correct or is this going to change?

26 Mr. HEINE. Yes, we don't know how much they have addressed it or how many of them have not addressed it.

26 Senator MELCHER. I think that is the case. I am going to follow up on my neighbor's comments on alluvial valley floors, and this question I will propose to you. I think all of the questions were very pertinent, but I think the test will come on alluvial valley floors on applying the regulations to specific drainages. And I refer from memory on this that, when we looked at the Sarpe Basin where the Westmoreland Mine is, it is in the basin and it is also the alluvial valley floor, we used that as an example. The Westmoreland Mine and

the Sarpe Basin was approved in Montana, and we envisioned that would meet the test here in the alluvial valley floors; and it would not be counter to the alluvial valley floor, but that mining in the farming area that was subirrigated, Sarpe Lake, would be prohibited, as provisioned in this bill.

26 That is the clear intent of that language. The language was gone over for years, as we both well know. So I caution you to apply whatever regulations are going to be to a specific western alluvial valley floor where there is some mining. And I hope it comes out that way. We put a lot of time into that. It was one of the more divisive points of the bill as far as those of us in the west are concerned. So I will be interested to follow very closely.

26 I know the regulation is a draft, but I think the whole test of it will be - is - does it follow through the Westmoreland Mine which is in the basin area that is permitted, but a mine in the actual valley floor where there is farming and is subirrigated will be prohibited. It is not simple but that is the test we use in writing the language.

26 Mr. HEINE. I appreciate your concern about that. The group that we have that is putting together some basic concepts on alluvial valley floors should be and must have representation in that group of a person who is familiar with the act and its history. We will certainly make sure that is the case.

27 Senator MELCHER. I have just one final comment, Senator Hansen. We have a lot of people who are working, and it is necessary to do that. Don't forget some westerners in there. There are some basic differences in the problems that occur in regulating. Don't forget we need some westerners in there, not because we are trying to get them jobs but because we think we have some specific problems in revegetation and water problems, that they may have a little broader background and be more adaptable.

27 Mr. HEINE. Yes, I am committed to have, as Secretary Andrus has indicated, a deputy to me who is a westerner and is familiar with those issues and also, of course, our Denver regional office will be staffed with persons who are intimately familiar with all of those issues.

27 Senator MELCHER. Thank you very much.

27 Senator HANSEN. Just let me say that I will have a follow-on question - I have it right now. May I have one other observation before I ask the question. You were speaking about your role in monitoring the surface effects of underground mining.

27 Will that include monitoring subsidence or the likelihood of subsidence?

27 Mr. HEINE. In the permanent program it is clear by the act that subsidence will be included in considerations in approving these mines.

27 Senator HANSEN. My final question, Mr. Chairman, is: The Department's settlement of NRVC versus Hughes, which Judge Pat signed 60 days ago, included a stipulation relating to the trading authority for alluvial valley floors in section 510 of the act. The stipulation limits trading of coal under alluvial valley floors for coal off of alluvial valley floors to those operators who have a right to mine coal under alluvial valley floors, the so-called grandfather mines. This directly contravenes the congressional interests of the provision for two reasons. One, the trading authority was specifically put into the bill by Senate conferees to be used in nongrandfather mines where a substantial legal and financial commitment has been made; and, two, the trading authority language specifically includes the statement; "notwithstanding any other provisions of law", which would seem to provide a basis for using this authority without the constraints of the leasing laws, Federal land planning laws, and perhaps NEPA.

27 Why did the Department voluntarily constrain its capability to trade lands during the early stages of program development?

27 Ms. DAVENPORT. Senator, I would ask Mr. Eichbaum, our solicitor, to address that. I think we will have to provide you with a full statement for the record by the members of the solicitor's office who are negotiating the settlement.

27 Senator HANSEN. That will be fine. We would attempt to make a response now because it just seems to me that you have limited and restricted the authority that we clearly intended to give you. I am surprised and dismayed.

28 Mr. EICHBAUM. I think you are right. The limitation did occur on those negotiations and that does raise serious concerns. I think that the rationale that took place during the bargaining was that the plaintiffs in that - in the Hughes case - clearly felt that they, by virtue of the Judge's order, had attained the limitation completely on any exchange of leases, notwithstanding the congressional language. The Department, in an attempt -

28 Senator HANSEN. May I interrupt? Are you saying that the plaintiffs felt that the judge's ruling had clearly vitiated the intent of the Congress.

28 Mr. EICHBAUM. That is correct. That was the plaintiff's position. I am not saying whether or not the Department agreed with it but I think the

Department felt that, number one, it was very important to open up some of that judge's orders or that some leasing on a short-term basis could go forward. Second, I think that the Department felt that as a practical matter the time frame for processing an exchange would be such that it would fit within the limitation of the stipulation. That is to say, let's assume - and as far as I know there have not yet been any requests for an exchange but if one came in -

28 Senator HANSEN. You say they have not been?

28 Mr. EICHBAUM. As far as I know, that is right, sir.

28 Senator HANSEN. You mean under the grandfather clause or under the so-called Wallop amendment?

28 Mr. EICHBAUM. That is correct, sir.

28 Senator HANSEN. I can provide you with some specifics that were - where your department has had such a request for some time, in Wyoming, and I am just amazed that you are not aware of that.

28 Mr. EICHBAUM. Mr. Lovell, from the assistant secretary - for lands and waters, may be able to address that.

28 Senator HANSEN. Are you aware of the request by the Cooksleys in Wyoming? Are you not aware of that?

28 Mr. LOVELL. I am not aware of that.

28 Senator HANSEN. Maybe you are not aware of that, but it has been down there 2 years, I think; maybe not quite that long.

28 Mr. EICHBAUM. If a request came in tomorrow, the processing of that request would take some period of time. Much of the work on that processing can go forward within the department now, notwithstanding the limitation of the stipulation that was entered into, the final event, which does have to take place - is the approval or the appropriation by the department of a programmatic EIS for coal leasing.

28 That, within the department, is scheduled to be done next year and that would support then the exchange of lease plan after the preliminary work - with respect to that particular exchange had been done. So it was also felt that as a practical matter that there was not a major time delay impact and that some work could be done.

28 The final point they make is that that stipulation does not affect at all the provision in the Wallop amendment, which would allow exchanges for feed coal. So there is room to implement that section.

28 Senator HANSEN. You mean under your stipulation there is room to implement that?

28 Mr. EICHBAUM. Yes, and only upon the feed coal.

29 Senator HANSEN. Maybe I misunderstand what the stipulation provides for. But my understanding was that the stipulation limits the trading of coal under alluvial valley floors for coal outside of the alluvial valley floors to those operators who have a right to mine coal under alluvial valley floors, the so-called grandfathered mines.

29 Now, are you saying that, despite the fact that a person may not have had mining operation approved in an alluvial valley floor where the coal was feed coal, that your stipulation would not deny that feed coal owner the right to exchange coal outside of an alluvial valley floor?

29 Mr. EICHBAUM. That is my understanding, Senator.

29 Senator HANSEN. I am interested in that because that is precisely the question that I address here. What would be your response to that? Would that person have the right?

29 Mr. EICHBAUM. It is my understanding that the interpretation in the solicitor's office, that the people who negotiated that - the stipulation is that it does not affect feed coal.

29 Senator HANSEN. I see. Well, we will follow up.

29 Mr. EICHBAUM. I will be happy to provide a detailed statement to you, Senator.

29 Senator HANSEN. The question has been asked, who would it affect?

29 Mr. EICHBAUM. Operators who have leased coal who would want to exchange for a new lease. And the whole Hughes decision went to the leasing process. But the authority that the Secretary has to exchange feed coal was not subject to the Hughes litigation.

29 Senator HANSEN. My information is that, in the checkerboard pattern of coal ownership in the West, there are instances wherein an operator would be mining up to and adjacent or contiguous to coal that is not under lease.

29 I think there is a further provision, is there not, that if an additional amount of acreage is granted to a lease, then the mineral royalty increases on all of the coal mine to whatever may have been the fee on this newly acquired tract.

29 Am I right on that?

29 Mr. EICHBAUM. Senator, I apologize. But the leasing program of the department is primarily the responsibility of another area of the solicitor's office, and I don't think I should attempt to answer that.

29 Senator HANSEN. I see.

29 Mr. EICHBAUM. I might be wrong, but I will attempt to obtain an answer for you.

29 Senator HANSEN. If I could, let me just state the rest of my problem then, and maybe that would be helpful to you, the problem in resolving what I think is an important obstacle to orderly development of coal.

29 In the case of a person who has fee coal, exchanges could be made if the Department were of a mind to make them, which I thought we clearly mandated the Department to do in the bill. And if that isn't the case, then I would be interested in knowing what the Department and the Solicitor's opinion is on that because I thought that was what you were all supposed to be doing.

29 Coal could be exchanged for federally owned coal outside the lease. In some of these instances, it might be under a surface that was leased out to someone else or could even be under fee-owned surface only, in which case, of course, the provisions of the surface mining consent come in; that is another part of it.

30 Where there is Federal coal outside that could be exchanged and could be made available and would be part of a logical leasing tract, it would seem to be in the public interest to remove whatever coal might be so situated while the mining operation was going forward.

30 Obviously, the reclamation requirements would make it far more expensive to go back and pick up small tracts later on, once the reclamation work has been completed. So I should think it would be clearly in the public interest to help perfect those kinds of trades. And that is what one of my constituents is interested in doing now. We have had inquiries from two or three different coal companies who are bypassing coal that could be mined. They can't mine now.

There has been sort of a ban on the leasing of any more coal, as you know, and yet here is feed coal in an alluvial valley floor, the title of which could pass to the Federal Government fully implementing the thrust of the surface mining law if the exchange could be made, if they have just had no luck at all in trying to get that sort of trade implemented.

30 I will be glad to give you more detail on that.

30 Ms. DAVENPORT. Senator, we will be happy to get a full answer for you. The matter of trading coal for coal, whether it be leased coal or fee coal, falls primarily within the auspices of the Assistant Secretary for Land and Water. We will also check - if you can provide us with a little more information as to where that request of 2 years ago is.

30 Senator HANSEN. I must admit that I think I am guilty of hyperbole when I say 2 years ago; it was not that long, it just seems that it was that long. We have had a lot of phone calls and correspondence, but it was not that long. Secondly, the other problem that I think is of importance is the matter of the royalty fee. No one objects as far as I know to a revised royalty being applied. But when you look at a small tract of land containing coal which could be removed and you try to work out the economics of the situation, if you must include in the cost of that tract the increased royalty that would have to be paid on coal that was mined with a lower royalty, in effect it does change the formula. And again, in my judgment, it would seem not to be in the public interest to have the operator be able to acquire this new lease only if he were able to bring back the extra royalty on coal that had been mined or leased under a different arrangement.

30 Obviously, what I am saying is that whatever it costs us to mine coal, ultimately it would have to be paid for by the users of energy. So let's not delude ourselves - as I think many of us earlier were inclined to do - in thinking that we can do lots of things and it won't hurt anybody; it will just be the coal companies that are going to have to pay the bill.

30 The people, of course, who are going to have to pay the bill are those who turn on their lights switches. They may be in Arkansas or St. Louis, or they may be in San Antonio, Tex. But wherever they are, if the coal is mined they are going to have to pay the bill. And I should think it is clearly in the public interest to remove what coal logically ought to be removed, under an arrangement that makes sense, without adding extra difficulties or impediments to the operation so as to result in a decision being reached that, despite the

fact that the coal is there and could be mined, it could be mined now while mining operation is ongoing.

31 The impact of it financially would be such as to dissuade an operator from going forward with it. We will supply you with the information. Thank you very much. I have no further questions, Mr. Chairman.

31 Senator FORD. If there are no further questions, we thank both the Secretary and the Director for being with us this morning. There are some questions that were left pending, particularly Senator Hansen's. And I have some other answers to questions that you will give us this afternoon, and you will keep Senator Melcher advised of your proposal on the Indian lands. And we will be in touch with you from time to time. Thank you very much for your patience and your answers this morning.

31 [Subsequent to the hearing, the Department of the Interior supplied the following:]

31 U.S. DEPARTMENT OF THE INTERIOR, OFFICE OF THE SOLICITOR, Washington, D.C. July 17, 1978.

31 HON. HENRY M. JACKSON, U.S. Senate, Washington, D.C.

31 DEAR SENATOR JACKSON: I recently obtained a copy of my testimony before your committee on April 27, 1978. In reviewing the transcript, I have noted one statement which is incomplete and I would like to ensure that the committee has a comprehensive answer to the question that was asked.

31 Senator Ford asked (Transcript, p. 25): "If you are 11 or 12 weeks late, you are extending the time of the State(s) to comply or do they still have to comply within the statutory limit?" I responded: "The State does not have to implement the permanent regulatory program and operators don't have to follow the permanent program until such time as a State is approved as the regulatory authority."

31 My answer was incomplete to the extent that it omitted any reference to the implementation of a Federal program for a State. Under Section 504(a) of the Surface Mining Control and Reclamation Act, the Secretary is required to promulgate and implement, no later than 34 months after enactment (June 3, 1980), a Federal program for a State that does not have an approved State program. This provision means that, if a State program has not been approved, the permanent regulatory program will be implemented and enforced through promulgation of a Federal program for the State at the latest by June 3, 1980. As a result, industry will have to comply with the performance standards of the

permanent program by that date, regardless of whether the States have all been approved as regulatory authorities.

31 I hope that this supplemental statement will clarify any misunderstanding caused by my testimony. I will be glad to provide any further information that you may need.

31 Sincerely yours,

31 WILLIAM M. EICHBAUM, Associate Solicitor, Division of Surface Mining.

32 @%United States Department of the Interior @%OFFICE OF SURFACE MINING
@%Reclamation and Enforcement @%WASHINGTON, D.C. 20240 @%MAY 25 1978
@%Honorable
Dale Bumpers @%Chairman, Subcommittee on @%Public Land and Resources @%of the Committee on Energy @%and Natural Resources @%United States Senate
@%Washington,
D.C. 20510 @%Dear Mr. Chairman:

32 Attached is a set of Senator Hansen's questions and OSM's answers thereto. These questions were submitted to us during the Subcommittee oversight hearings on April 24, 1978. I am submitting these responses for that record as per discussions at that time.

32 Two questions proposed in the course of the hearing on April 24, 1978 prompted further review by our Office. I would like to submit this statement to amplify the record on these subjects.

32 Senator Ford asked about the effect of the Act on surveyors. OSM has prepared a draft study of that question. We have discussed the draft with a State surveyors' organization. This study should be started in early June and will run for a few months. As soon as the results are in, we will advise the Congress of the results and any recommendation we may have at that time.

32 Senator Ford also asked about OSM experience with small operators' exemptions. As of May 17, 1978, we have received 1,030 applications for small operators' exemptions. Five hundred and eighty five were approved and 250 were pending (because the application was incomplete or additional information was being reviewed). A total of 195 were rejected. Of this total, 40 were late in applying; 130 involved permits issued or renewed after August 3, 1977; and, 25 involved operations with tonnage exceeding the legal limit.

32 I appreciate the interest and the cooperation shown by the Committee and the staff. If there are any additional inquiries, please let me know.

32 Sincerely,

32 Walter N. Heine, P.E. Director

32 Attachment

33 OSM Answers to Senator Hansen's Questions

33 1. What is OSM doing with respect to Alluvial Valley Floors?

33 A. We are in the process of developing a set of guidelines that can be used to identify the existence of alluvial valley floors, their characteristics and the other information pertinent to mining and reclamation. It is anticipated that these guidelines will be specific and thorough enough so skilled individuals from industry, State or Federal agencies or other groups can apply them and reach the same conclusions for any specific sites.

33 For instance, the first step of this effort is to set forth "rules-of-thumb" and evaluation criteria that individuals could use in a reconnaissance of a site to quickly determine if there is a reasonable potential for an alluvial valley floor or little or no potential for their existence. These "rules-of-thumb" would allow quick separation of possible alluvial valley floor areas from other areas by a series of field observations. These observations include for instance: presence of flood irrigation or water spreading structures; geographology; vegetation differences across streams and upland; land-use (hay cropping, etc.).

33 When a draft of this initial paper becomes available and has been reviewed by the States, I will forward a copy to the Committee.

33 2. Do the Interim Regulations address Alluvial Valley?

33 A. Yes. The regulations include standards for protecting the "essential hydrologic functions" of alluvial valley floors pursuant to the inclusion of Sec. 515(b)(10) in the initial regulatory program. The regulations also included the Sec. 510(b)(5) test for new mine starts on alluvial valley floors since its exclusion would jeopardize any such mines with the approval of a permanent State regulatory program or the imposition of Federal program at the end of 34 months after enactment (Sec. 504(a)).

33 3. Why wasn't this Alluvial Valley Floor Task Force started earlier?

33 A. OSM did not have the resources to specifically address alluvial valley floors in depth during the preparation of the interim regulations. These regulations were prepared by a group composed primarily of individuals from other agencies because no funds had been appropriated for OSM activities.

33 In addition, some of the same individuals required for larger effort (the interim regulations) are those also working on the "alluvial valley floor" guideline effort.

34 4. Who is on the Task Force?

34 The first meeting of the OSM State and other Federal agency members was April 7th. An attendance list of these meeting is attached.

34 5. Any industry members?

34 A. No, but neither are there representatives from any other interest group. It seemed best to limit the initial effort to the States and OSM in order to see if we could quickly develop and agree on some guidelines. The smaller the group, the better the chance for success. Obviously, when the States and OSM agree on guidelines, these will be released to the public and comments solicited. Eventually, such guidelines may be issued as part of the Federal regulations governing the program and at that time formal comments from all parties would be forthcoming. In the meantime, we have made available to anyone who has so requested, copies of the materials circulated at the April 7th meeting and I anticipate we will do so for future meetings of this group.

34 6. What technical references will be utilized by the Task Force?.

34 A. Such references will be noted in the technical materials prepared by this group. A copy will be sent to the Committee when completed. Some are included in the enclosed materials from the April 7th meeting.

34 7. Western State proposals?

34 A. Several of the Western States have either set forth proposals or commented on materials provided to them by OSM.

35 8. Q. and A. A copy of these proposals, as well as the materials distributed prior to and at the April 7th meeting are enclosed for the Committee.

35 9. When do you expect to reach full staffing with OSM personnel?

35 A. We now anticipate that we will be at full strength by September 30. We have approximately 100 people on board now, and expect to add about that many again in the next four to five weeks. By early summer we should have close to half our total strength of 800, with the remainder coming on board in the last quarter of the fiscal year.

35 10. How are you approaching the problem of preparing an environmental impact A statement?

35 A. Basically, we are relying on a team of specialists being borrowed from other agencies because we do not yet have people in-house for this work.

The EIS team is being assembled now. A timetable has been developed for completion of the EIS in concert with the final publication of the permanent regulations about November 1. Their first task will be to assemble information from the personnel who are drafting the regulations. They will then begin the environmental analysis of all the viable alternatives based on each section of the regulations.

35 11. Don't you need to have the permanent regulations in draft form to assess this impact?

35 A. Yes, but we will begin to work based on our preliminary in-house drafts of the regulations.

35 12. Is an economic impact analysis being prepared?

35 A. Yes. A Regulations Analysis Study Group has been assembled and is currently working closely with the drafters of the permanent program regulations in the development and analysis of the economic consequences of significant alternatives for implementing performance standards, permits and bonding requirements, and certification and training of blasters requirements of P.L. 95-87.

35 13. How many people have been assigned to this effort?

35 A. The Regulatory Analysis Study Group consists of five professional experts in the fields of mining economics, reclamation, environmental protection, national economics, and writing-editing and one administrative assistant for a total of six. Additional personnel will be added as required to accomplish the regulatory analysis.

36 14. On alluvial valley floors, what specifically are "undeveloped range lands which are not significant to farming" and what specifically is "of such small acreage as to be of negligible impact on the farm's agricultural production?" Are the essential hydrological functions" to be preserved relating to agricultural activities, geology, or fluvial systems?"

36 A. With respect to the questions addressed to Alluvial Valley Floors, the Office of Surface Mining is presently conducting a detailed analysis of these and related questions in conjunction with other agencies of the Federal Government and the States. We anticipate that that analysis will answer many of these questions and we will forward a copy of the working paper to the Senate upon its completion.

36 15. Specifically, when will the final regulations for the permanent regulatory program be promulgated.

36 A. Our present schedule calls for issuance of final regulations by the

first week of November. Our schedule also calls for informal seminars in late June and public hearings in four different places in the United States in early September.

36 16. In some cases leaving the high wall in part will result in less surface disturbance and provide additional wildlife habitat. Can a provision be added for a variance to permit leaving part of a high wall when justified as more desirable for reclamation?

36 A. As you know, the leaving of highwalls was extensively debated by Congress over the years the Act was being developed. As a result of this debate, more flexibility was incorporated into the bill to permit variances from approximate original contour reclamation provided the operator documents the proposed use of the mined land (515(c) and (e)). These variances provide a means to meet wildlife habitat and most other land use needs while eliminating highwalls.

36 17. Liability for revegetation for ten years is totally unreasonable in most cases. Can a variance to five years be provided when justified?

36 A. The Act requires that operators retain responsibility for success of their revegetation efforts five full years except where rainfall is twenty-six (26) inches or less annually; then the responsibility extends to ten full years. It appears clear that Congress intended no shortening (by regulation) of the time below ten years in the lesser rainfall areas of the country (515(b)(20)).

37 18. The use of the Abandoned Mine Reclamation Fund under Title IV of the Act is regulated in the Act by a set of priorities. Section 402(g)(2) of the Act seems to pose an obstacle to the States exercising flexibility in using these funds in the areas where the most serious impact from mining is felt. In Wyoming the most serious need is to provide construction of public facilities in areas impacted by coal development. The question is, will the Office of Surface Mining work with the States in applying the Act and the funds available under it to address the most serious problems facing the State? Second, what kind of regulations or guidelines are being developed by the Office of Surfacing Mining in order that such a flexible policy can be implemented?

37 A. Section 402(g)(2) of the Act authorizes use of the State's share of

the Abandoned Mine Reclamation Fund for assistance to areas impacted by current coal development under specified conditions. The conditions include a requirement that the objectives of Section 403 of the Act, with respect to lands previously mined for coal, and section 409(a), with respect to previous mining for other mineral and materials, be met. Further, funds available under the Federal Mineral Leasing Act of 1920, as amended, or the Act of October 20, 1976, P.L. 94-565, must be inadequate to meet the needs of the impacted area for construction of specific public facilities. While we will work with the States to assure that these requirements are interpreted reasonably, we have no choice but to require that they be met before the Fund is used for impact assistance.

38 OUTLINE FOR GUIDELINES ON IDENTIFYING AND PROTECTING ALLUVIAL VALLEY FLOORS DURING INTERIM PROGRAM

38 Background

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39 GUIDELINES ON IDENTIFYING AND PROTECTING ALLUVIAL VALLEY FLOORS
DURING
THE INTERIM PROGRAM

39 Background

39 Legislative consideration by the Congress of the effect of surface coal mining on alluvial valley floors in Western valleys was prompted by a statement in a report issued in 1974 by the National Academy of Sciences:

39 In the planning of any proposed mining and rehabilitation it is essential to stipulate that alluvial valley floors and stream channels be preserved. The unconsolidated alluvial deposits are highly susceptible to erosion as evidenced by the erosional history of many Western valleys which record several periods of trenching in the past several thousand years . . . Removal of alluvium from the thalweg of the valley not only lowers the water table but also destroys the protective vegetation cover by draining soil moisture. Rehabilitation of trenched valley floors would be a long and expensive process and in the interim these highly productive grazing areas would be removed from use. (Rehabilitation Potential of Western coal lands:

39 Ballinger Publishing Company, Cambridge, Mass., 198 p., see p. 44-45; 1974.)

39 In considering alluvial valley floors, the Congress recognized the special role of such areas in maintaining agricultural activities, and it ultimately defined alluvial valley floors and provided for their protection. The role of alluvial valley floors in Western agriculture was expressed as follows:

39 Of special importance in the arid and semiarid coal mining areas are alluvial valley floors which are the productive lands that form the backbone of the agricultural and cattle ranching economy in these areas. For instance, in the Powder River Basin of eastern Montana and Wyoming, agricultural and ranching operations which form the basis of the existing economic system of the region, could not survive without hay production from the naturally subirrigated and flood irrigated meadows located on the alluvial valley floors. (House Report No. 95-218, p. 116; 1977.)

40 In deciding on a definition of alluvial valley floors, the Congress indicated its understanding that these necessary agricultural activities in alluvial valley floors were made possible by a combination of geological and hydrological features. These were discussed as follows:

40 Alluvial valley floors refers to those unconsolidated deposits formed by streams (including their meanders) where the ground water level is so near the surface that it directly supports extensive vegetation or where flood stream flows can be diverted for flood irrigation. . . . In more technical terms, alluvial valley floors are the upper, near-horizontal surface of the unconsolidated stream-laid deposits which border perennial, intermittent, or ephemeral streams. The alluvium that makes up the stream-laid deposits is composed of clay, silt, sand, gravel, or similar detrital material that has been, or is being, transported and deposited by streams. Alluvial valleys within this definition are traversed by perennial or intermittent streams or by ephemeral stream channels; are irrigated in most years by diversion of natural flow or ephemeral flood flow on the modern flood plain and adjacent low terraces, or by subirrigation of the flood plain by underflow; and are used for the production of hay and other crops that are an integral part of an agricultural operations. (House Report No. 95-218, p. 118-119; 1977.)

40 Such considerations were condensed in the definition adopted in the Act (Section 701(1) of P.L. 95-87):

40 For the purposes of this Act . . . "alluvial valley floors" means the unconsolidated stream laid deposits holding streams where water availability is sufficient for subirrigation or flood irrigation agricultural activities but does not include upland areas which are generally overlain by a thin veneer of colluvial deposits composed chiefly of debris from sheet erosion, deposits by unconcentrated runoff or slope wash, together with talus, or other mass movement accumulation and wind-blown deposits.

41 This brief definition established the existence of a sufficient water

supply as a means of identifying an alluvial valley floor, but the Congress did not give criteria by which the adequacy of this supply for agricultural activities could be determined. The exclusion of upland areas resolved confusion that at one time clouded the question of how much land would be affected by being classified as alluvial valley floors (House Report 93-, p.). The nature of upland areas was described in terms of the presence of colluvial and wind-blown deposits, but the existence of such materials in an alluvial valley floor, as a place characterized by stream-laid deposits holding streams, was not logically excluded.

41 Hydrologic considerations were also emphasized in the two parts of the Act (Sections 510 and 515) that deal directly with protection of alluvial valley floors, namely:

41 Sec. 510(b) No permit or revision applications shall be approved unless . . . the regulatory authority finds . . . that . . .

41 (5) the proposed surface coal mining operation . . . would -

41 (A) not interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated, but, excluding undeveloped range lands which are not significant to farming on said alluvial valley floors and those lands as to which the regulatory authority finds that if the farming that will be interrupted, discontinued, or precluded is of such small acreage as to be of negligible impact on the farm's agricultural production, or

41 (B) not materially damage the quantity or quality of water in surface or underground water systems that supply these valley floors.

42 Sec. 515(b)(10) minimize the disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation by . . .

42 (F) preserving throughout the mining and reclamation process the essential hydrologic functions of alluvial valley floors in the arid and semiarid areas of the country.

42 Section 510 excludes mining on alluvial valley floors significant to farming and excludes mining that would materially damage the water supply of such alluvial valley floors. Section 515 provides, more generally, for protection and reclamation of alluvial valley floors irrespective of their significance

to farming. In Section 510, the Congress did not give definitions or criteria for the terms, "farming," "undeveloped range lands," "significant to farming," "small," "negligible impact," and "material damage." In Section 515, preservation was understood as meaning that:

42 Under site-specific circumstances it is possible to mine on valley floors and still be able to assure the maintenance of the hydrologic functions of the area. Where mining is proposed on alluvial valley floors the methods of ground and surface management would have to be designed for the specific characteristics of the site. (House Report No. 95-218, p. 118.)

42 Preservation of the hydrologic functions was explained as follows:

42 Preserving the essential hydrologic functions during the mining process includes assuring that the water balance both upstream and downstream of the mine is maintained so that natural vegetation cover is not destroyed and the erosional balance of the area is not seriously disrupted. In addition, upon the completion of mining, the backfilling, placement of material, and grading, must assure that the hydrologic function of the area prior to mining is continued and that the operation does not become a barrier to water movement and availability in the valley deposit. (House Report No. 95-218, p. 118.)

43 Further, to the extent that alluvial valley floors are part of area affected by mining, whether on-site or off-site, the Congress provided for their protection under the general provisions on minimizing disturbances to the prevailing hydrologic balance, as required under Section 515(b)(10). An assessment by the regulatory authority of the probable cumulative impact on the hydrologic balance was required to be one of the findings for approval or denial of an application for a mining permit under Section 510(b). The particular kinds of data to be collected and analyzed for this assessment were specified in Section 507(b)(11), as follows:

43 Sec. 507(b) The permit application . . . shall contain . . .

43 (11) a determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site, with respect to the hydrologic regime, quantity and quality of water in surface and ground water systems including the dissolved and suspended solids under seasonal flow conditions and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the regulatory authority

of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability.

43 The standards pertinent to the hydrologic balance were understood to be as follows:

43 Principal environmental standards pertaining to the hydrologic balance focus on preventing toxic drainage, prevention of sedimentation and siltation using the best technology available, avoidance of channel-deepening and enlargement, restoration of recharge capability of the mine site, and preserving the functions of alluvial valley floors. (House Report No. 95-218, p. 114.)

44 In preparing interim regulations on alluvial valley floors, the Department of Interior adopted performance standards that reflect the requirement of the Act to minimize disturbances to the prevailing hydrologic balance by preserving the essential hydrologic functions of alluvial valley floors (Federal Register, vol. 42, no. 239, p. 62656). That is, the regulations stem from the mandate of the Congress to protect the water supply that is necessary for the kinds of agricultural activities carried on in alluvial valley floors. More generally, the regulations reflect the understanding of the Congress that the existence of a water supply is implicit evidence that certain associated geologic and hydrologic conditions, which cause an alluvial valley floor to function as a place for agricultural activities, are also present. The regulations address the geologic and hydrologic conditions by providing further definitions and by expressing the hydrologic functions of alluvial valley floors in terms of certain measurable physical features and properties.

44 With respect to the hydrology of alluvial valley floors, the pertinent definitions in the regulations - other than those in the Act - are: "aquifer," "essential hydrologic functions," "flood irrigation," "ground water," "hydrologic balance," "hydrologic regime," "intermittent or perennial stream," "recharge capacity," "subirrigation," "surface water," and "water table" (Part 710.5).

45 The features and properties of alluvial valley floors by which their hydrologic functions can be characterized are expressed in the regulations in conventional terminology, namely: longitudinal profile and cross-sectional shape of the stream channel; aquifers, capillary zones, perched water zones, and confining beds; quantity and quality of surface and ground water that supply alluvial valley floors; depth to and seasonal fluctuations of ground water beneath alluvial valley floors; configuration and stability of the land surface of alluvial valley floors; and moistureholding capacity of soils and physical and chemical characteristics of subsoil. The regulations require that these

aspects pertinent to alluvial valley floors shall be determined by the permittee from detailed surveys and from baseline data covering a full water year. Plans for protection of alluvial valley floors and information on historic land use are also specified. (Part 715.17(j).) This requirement for collection of data by the permittee is in accord with a long-standing provision of other regulatory programs (House Report No. 95-218, p. 108).

45 The guidelines given here are intended to clarify the regulations and promote their uniform understanding in Western states.

45 A possible source of confusion exists in the Act in that the definition of alluvial valley floors refers to "agricultural activities" and Section 510 refers to "farming." For purposes of these guidelines, farming is considered to be within the meaning of agricultural activities under the Act.

46 Structure of guidelines

46 These guidelines are arranged in four parts, which generally conform with progressive stages in the identification and protection of alluvial valley floors. Part 1 concerns the initial determination of whether alluvial valley floors are present in a proposed mining tract or in nearby areas that could be affected by the proposed mining. Part 2 deals with data needed for a determination of the presence or absence of an alluvial valley floor when the permittee and the regulatory authority disagree, and with criteria by which these data are to be evaluated by the regulatory authority in reaching a decision. Part 3 pertains to criteria for evaluating the significance of an alluvial valley floor to farming (agricultural activities), criteria for judging when mining on an alluvial valley floor would have negligible impact on agricultural production, criteria for predicting the material damage to the quantity and quality of water in surface and underground systems that supply valley floors, and standards by which the allowable degree of such material damage can be determined. Part 4 provides criteria for determining compliance of the mining and reclamation process with provisions under the Act for preserving the essential hydrologic functions of alluvial valley floors, and criteria with respect to alluvial valley floors for determining compliance of the mining and reclamation process with the general provisions to minimize disturbances to the prevailing hydrologic balance.

47 Use of guidelines

47 Findings under Parts 1, 2, and 3 of these guidelines shall be made before a permit or revision application can be approved. Findings under all parts of these guidelines shall be made before a mining and reclamation plan can be approved. Findings under Part 4 also shall be made during the mining and reclamation process as part of the inspection procedure specified in the Act.

47 Part 1. Initial determination of presence or absence of alluvial valley floors.

47 To avoid unnecessary surveys and collecting of data by the permittee, the regulatory authority shall make an initial determination of the presence or absence of alluvial valley floors in the proposed mining tract and in nearby valley areas that could be affected by the proposed mining. Because alluvial valley floors can exist under the Act only in valleys holding streams, this determination shall begin with examination of a topographic map at a scale of 1:25,000 or larger (such as a standard U.S. Geological Survey 1:24,000 topographic quadrangle) or of suitable vertical aerial photographs at a similar or larger scale. By such examination, upland areas can be routinely excluded, and valleys for field study can be identified. A valley area need not be considered if it receives water only from a drainage basin of less than one square mile. Under the law, valleys holding streams of all classes - perennial, intermittent, and ephemeral - must be considered. As guidance in recognizing typical occurrences of alluvial valley floors in the northern Great Plains, published maps and reports on alluvial valley floors should be considered: especially, Malde and Boyles (1976), Schmidt (1977), and Hardaway and others (1977). Structures installed along streams for the local control or use of available water, such as stock ponds, fish ponds, or impoundments for growing other aquatic animals and plants, headgates, check dams, floodcontrol works, berms, dikes, ditches and ditch embankments, and waterspreading devices, represent agricultural activities and are to be considered as existing features of the hydrologic system. Removal of such man-made structures, even though they may be the sole means by which a valley floor can be used for agriculture, shall not be considered to be grounds for excluding such an areas from being classified as an alluvial valley floor. As understood by the Congress:

48 The phrase "not interrupt, discontinue or prevent farming" was modified to "not interrupt, discontinue or preclude farming" in order to assure coverage of those lands which may be taken out of agricultural production in order to qualify for a new mine start on an alluvial valley floor. The conferees did not want this type of change in land-use to qualify an alluvial floor for mining. (Conference Report No. 95-493, p. 104.)

48 This finding by the conferees did not mention a time period during which the practice of such farming would be recognized, but recognition of agricultural use based on at least 5 years of such use out of the 20 years preceding the date of a permit application is understood from the provisions for protection of prime farmland. Thus, a determination of use of water-management

structures, as well as other agricultural activities on valley floors, shall be based on historical evidence covering the previous 20 years. The process of identifying valleys considered to be occupied by alluvial valley floors, or of identifying alluvial valley floors in particular segments of such valleys, depends on applying certain rules of thumb by which valley areas not conforming with the rules are excluded. A valley area can be excluded if it fails to conform with any of the rules, except that in the matter of water for irrigation or subirrigation only surface water or ground water (not necessarily both) need be present. Remaining valley floor areas are then classified as being alluvial valley floors. If so classified, valley floor areas are considered to be places for making detailed surveys and collecting baseline data, as specified further in these guidelines. The rules of thumb for considering valley areas as alluvial valley floors are as follows:

50 A. The valley floor is composed of unconsolidated stream laid deposits (alluvium), but the presence of scattered geologic materials of other origin, or the existence of small patches or outcrops of nonalluvial materials, shall not be a basis for excluding the valley area from consideration as an alluvial valley floor, provided that its general character is due primarily to the action of a stream. Examples of non-alluvial materials that can be included within the area of an alluvial valley floor are: bedrock outcrops or outliers; patches of saline minerals; swampy ground or accumulations of organic muck; bars of coarse-textured gravel; thin layers of eolian sand and silt, or accumulations of such materials at fences or other surface irregularities; local surficial or intercalated layers of mixed detritus situated in the valley area so as to be recognizable geologically as products of contiguous slope wash; small areas of residuum or of deeply weathered soils that have not been visibly transported by geologic processes; and unconsolidated materials so poorly sorted, indistinctly stratified, or vaguely modified by surface geologic processes that their deposition by stream action is inconclusive.

50 B. The valley floor is used for agricultural activities in the sense that it is a tract of land for the raising, breeding, or production of animal or vegetable life. Examples of such activity are: cropping of hay or grain; grazing, pasturing, or watering of livestock; production of food or fibre; and cutting of wood.

51 C. During most years, flood-frequency characteristics and the mean annual runoff of the stream in the valley floor are such as to achieve irrigation or flood irrigation of the valley floor during the growing season, the amount of water available annually being at least 2 acre-feet for each acre used as irrigated cropland, and at least 1 acre-foot for each acre of valley floor used as pasture.

51 In the circumstance that satisfactory records of flow characteristics are not available, these characteristics shall be determined in the field by measuring suitable properties of channel geometry, especially the width of the active channel, taking into account differences in flow between perennial, intermittent, and ephemeral streams, and taking into account regional differences in flood-frequency discharge and mean annual runoff. For regions of the Missouri River basin, methods of measurement of channel geometry and formulas for calculating the estimated flood-frequency discharge and mean annual runoff, for streams with active-channel widths of at least 5.0 feet, are explained by Hedman and Kastner (1977). (Hedman, E.R., and Kastner, W.M., 1977, Streamflow characteristics related to channel geometry in the Missouri River basin: U.S.Geol. Survey, Jour. Research, v. 5, no. 3, p. 285-300.) Similar methods for estimating flow characteristics in regions of Wyoming, including the flow of intermittent and ephemeral streams with active-channel widths as narrow as 2 feet, are described by Lowham (1976). (Lowham, H.W., 1976, Techniques for estimating flow characteristics of Wyoming streams: U.S.Geol. Survey Water-Resources Investigations 76-112, 83 p.) The magnitude and frequency of flood volumes and flood peaks that can be expected from drainage basins smaller than 11 square miles in the plains and valley areas of Wyoming are given by Craig and Rankl (1977). (Craig, G.S., Jr., and Rankl, J.G., 1977, Analysis of runoff from small drainage basins in Wyoming: U.S.Geol. Survey Open-File Rept. 77-727, 88 p.)

52 D. Subirrigation of a valley floor - if irrigation by surface flow is found to be insufficient for agricultural activities, as explained above - is such as to account for the recognized agricultural activities, although perhaps only partially.

52 The adequacy of subirrigation to compensate for a deficiency in surface water for farming shall be determined primarily by historical evidence of land use, namely that the availability of water from all sources has been sufficient for specified agricultural activities, but this determination shall be supported

by evidence of the dependence of farming on an underground supply of water.

53 If satisfactory records of depth to ground water, consumption of ground water or capillary water by plants growing on the valley floor, and other pertinent hydrologic data are available for assessing the dependence of plants on delivery of water to their roots from underneath, this information shall be used to determine the amount of water supplied by subirrigation. If such records are lacking, the evidence of subirrigation shall be based on characteristics of the vegetation. The justification for this procedure is the principle that the vegetation provides tangible evidence of long-term hydrologic conditions over a period of many years. To determine that the vegetation reflects subirrigation, the vegetation shall be assessed in terms of water requirements of species found to be present, their density in providing ground cover, and their contrast with vegetation types in upland areas that depend only on precipitation and local runoff. Etc.

54 E. The difference in altitude between the stream, or the channel floor if the stream is either intermittent or ephemeral, and the stream-laid deposits being considered does not exceed, on the average, the amounts given in the following table - the difference being adjusted to the area of the drainage basin upstream, as indicated.

54 Difference in altitude Area of drainage basin

54 (feet) (square miles) to

54 The concept to be applied in making this measurement is that an alluvial valley floor typically consists of three parts: a stream channel, the flood plain, and adjacent low terraces (usually consisting of matching level-topped surfaces on opposite sides of the stream). The outer boundary of such a terrace is marked by a more or less conspicuous rise to more elevated land - the rise being marked by a step or by a noticeable slope that is traceable along the trend of the valley.

54 The low terraces, and of course the flood plain, are irrigated by diversion of natural flow or by seasonal flood flow. Stream-laid deposits above an alluvial valley floor are not so irrigated, even though they may be geologically and morphologically similar to the low terraces. The flood plain, and in some instances the low terraces, are subirrigated by underflow of ground water. Low earthen structures for local management of surface water, such as berms, dikes, ditch embankments, flood control works, and water-spreading devices are to be excluded from these measurements.

55 F. The width of the valley floor, within the restriction of height explained in Rule E, is not less than 50 feet where the valley floor is used for pasture, and not less than 150 feet where the valley floor is used as cropland.

55 The basis of these limits . . . Etc. Part 2. Determination of persistence or absence of alluvial valley floors when permittee and regulatory authority disagree.

56 When the permittee and regulatory authority disagree on the interpretation of evidence by which the regulatory authority has initially identified the existence of an alluvial valley floor, the permittee shall be required to make detailed surveys and collect baseline data by which a final determination can be made. Accordingly, this determination will be based on geologic, hydrologic, biologic, and land use information that is more site-specific than the field study made for the initial finding. The need for this site-specific information, like the information specified in the guidelines for Part 1, stems from the definitions for an alluvial valley floor and its essential hydrologic functions, together with the legislative history of the Act.

56 The information to be provided by the permittee is as follows:

56 1.) Maps, profiles, sections, and other appropriate descriptive data covering a full water year (October 1 to September 30) that pertain to discontinuities in the longitudinal profiles of streams in valley floors, vegetation in stream channels, stability of stream banks, impoundments, nature of stream-laid materials in point bars and other channel deposits, and other geologic evidence of the erosional and depositional character of streams that could affect irrigated or subirrigated agricultural activities.

57 2.) Topographic and geologic maps of valley areas, transverse geologic sections reaching across valley floors between adjoining upland areas, and longitudinal geologic sections - all at a scale large enough to show features of lithology and topography that could affect irrigated or subirrigated agricultural activities.

57 3.) Measurements of lithologic texture, water-storage capacity, and permeability at suitable places in valley floors and upland areas so as to be representative of geologic stratigraphy, insofar as these factors could influence the role of a valley floor as a place for collecting, storing, and regulating the natural flow of surface water and ground water.

57 4.) Stream hydrographs for all streams that would be disturbed by mining that is planned during the life of the mine, the hydrologic data being measured over a full water year.

57 5.) Measurements throughout a full water year showing the depth and saturated thickness of all aquifers, confined, unconfined, and perched, for all areas in which disturbance by mining is planned during the life of the mine - the water level in valley floor areas being measured by means of a continuous water-stage recorder at one-to-one scale.

58 6.) A map showing the pattern of flow of ground water in the mining tract, or the overlapping patterns of flow in the case of superimposed aquifers - the data being derived from observations made throughout a full water year.

58 7.) An analysis of inflow and outflow (recharge and discharge) of surface water and ground water through the drainage basins of valley areas that hold streams.

58 8.) Standard chemical analyses of quality of surface water and ground water for samples taken at suitable intervals during a full water year.

58 9.) Measurements in representative valley floor areas and upland areas of maximum and minimum quantities of moisture storage in the root zone - the measurements being made on samples taken at contiguous intervals of depth and collected at appropriate times during the year, namely when the soils are most wet and most dry.

58 10.) A vegetation survey, including maps and transects of valley floors and of adjacent upland areas. The degree of detail expressed by the survey should be commensurate in scale with geologic maps and sections - and commensurate in scale with soil surveys and soil descriptions, if available. Such information should enumerate plant species, their relative abundances in vegetation associations, percent of ground covered by living and dead plants during the growing season, comparative forage production (pounds per acre), and percentage of cover by crowns of trees if present.

59 11.) Historic information on land use extending back at least 20 years, giving particular attention to use of valley floors and their role with respect to use of upland areas.

59 From this information, the regulatory authority shall make a final determination of the presence or absence of alluvial valley floors in the proposed area of mining and in nearby areas that could be affected by the proposed mining, based on the following criteria:

60

3 Meeting Attendees
April 7, 1978

Name	Organization	Telephone#
Don Crane	Consultant to DOI	837-5914

Bob Yuhnke	USDI, Regional Solicitor's Office (Denver)	234-3175
Harold E. Malde	USGS, Denver	234-2864
Brace Hayden	Administrator, Recl, Div., DSL, Montana	406-449-2074
Mike Bishop	Hydrologist, Recl. Div., DSL, Montana	406-449-2074
Dennis Hemmer	DSL, Montna	406-449-2074
Allen D. Klein	Dept. Head, Reclamation, Bismarck, ND	701-224-2400
Ervin J. Barchenger	Environmental Scientist PSC, Bismarck, ND	701-224-2400
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Roger Peterson	DEQ, Hathaway Bldg. Cheyenne, Wy 82002	307-777-7756
Dan Herlihy	DEQ, Hathaway Bldg. Cheyenne, Wy 82002	307-777-7756
Shirley Lindsay	EPA - Denver	FTS-327-5914
Bob Starr	USGS - Denver	234-4666
Don Libbey	USGS - Denver	234-2855
John Matis	USGS - Denver	234-5221
Randall J. Overton	Colorado MLRB - Denver	839-3567
Dean Massey	Colorado MLRB - Denver	839-3567
H. G. Stewart	USGS, Reston, VA	703-860-7493 FTS-928-7493
George H. Davis	USGS, Reston, VA	703-860-7493 FTS-928-7493
John Hardaway	EPA - Denver	303-837-5914 FTS-327-5914

[See Table in Original]

61 GUIDELINE FOR IDENTIFICATION OF ALLUVIAL VALLEY FLOORS IN ACCORDANCE WITH OSM SURFACE MINING RECLAMATION AND ENFORCEMENT PROCEDURES

61 The OSM's Surface Mining Reclamation and Enforcement Provisions require special mining and reclamation methods for alluvial valley floors where water is sufficient for subirrigation or flood irrigation agricultural activities (710.5 and 715.17(j)). This guideline was written to assist in identification of these areas in the field.

61 The appropriate procedure for identification in the field is to delineate

the alluvial valley floor areas using geomorphic criteria and then to eliminate those areas which are not subirrigated and do not have the capability for flood irrigation due to lack of sufficient water or poor soils or steep terrain, characteristics which preclude potential flood irrigation. The areas left will be alluvial valley floors where water is sufficient for subirrigation or flood irrigation agricultural activities. These are the areas designated for special treatment in the Federal Rules and Regulations.

61 Alluvial Valley Floor

61 An alluvial valley floor is comprised of unconsolidated stream-laid deposits which hold a stream. The stream-laid deposits include all valley sediments defined in Table 1, except those sediments deposited on the valley margin. An alluvial valley floor is found in a reach of the fluvial system which is commonly referred to as fluvial zone 2. The unconsolidated deposits are not necessarily continuous in depth or longitudinal profile.

61 The following definitions apply to the terms as they are used above:

61 1. Stream - a perennial stream where the channel bed is always below the water table or an intermittent stream where water remains in storage beneath the ground surface and ground water contributes to stream flow during dry periods. The definition does not include ephemeral streams where there is no ground water contribution to stream flow.

62 2. Fluvial Zones - Fluvial zones divide the alluvial system in terms of water discharge and sediment collection, transportation and deposition. These zones are defined below.

62 a. Zone 1 - The drainage basin which is the area of maximum collection and contribution of both water and sediment to the fluvial system.

62 b. Zone 2 - The area which transports water and sediment in either a stable channel (where sediment deposition is in equilibrium with sediment transport) or an unstable channel (where sediment is actively being deposited or removed by the river).

62 c. Zone 3 - The alluvial fan which is the result of sediment deposition commonly at an area of abrupt decline in water velocity due to a sudden decrease in steepness of slope.

62 Subirrigation

62 Subirrigation means irrigation of plants with water delivered to the

roots from underneath. Worded in another way, it means the stream laid deposits are semisaturated or saturated with water derived from the stream to the extent that wetland or mesophytic plants (plants requiring extra water) are able to maintain growth through most of the growing season without depending upon precipitation, except that precipitation which is necessary to recharge the stream.

62 The following characteristics are indicative of subirrigation:

62 1. Diurnal fluctuation of the water table due to difference in night and day evaporation rates.

62 2. Increasing soil moisture from surface to water table due to capillary action.

62 3. Wetland and/or mesophytic indicator plants growing on suspected subirrigated area. Examples are sedges, rushes, willows, cottonwoods, cattails, bulrushes, canarygrass, cordgrass, reedgrass, buffaloberry, and greasewood.

63 4. Greater plant vigor and sustained growth on suspected subirrigated area in late summer as may be evident by infrared photographs or direct observation.

63 5. Mottling of soils in the root zone.

63 As a general guide, areas which are less than ten contiguous acres and/or areas which are less than 15m wide on one side of the stream bank are too small to be considered for agricultural activities unless these small areas fall between larger areas. These small areas should not be included under part 715.17(j) of the Surface Mining Reclamation Enforcement Provisions.

63 Subirrigated areas due to artificial supply of water (i.e. seepage from impoundments, irrigation ditches and irrigated fields and water supplied from artesian wells) should not be considered in the determination of subirrigated areas. Capability For Flood Irrigation

63 Flood irrigation means irrigation through natural overflow or the temporary diversion of high flows in which the entire surface of the soil is covered by a sheet of water. Areas which have a potential for flood irrigation may be identified by the following general characteristics:

63 1. Water from the same drainage basin is available for irrigation and may be transported to the potential area by gravity flow through such structures as ditches, canals, or pipes.

63 2. Two acre feet of water is available per acre of land sometime during the period from May 1 to September 15 for more than one-third of the years of record.

63 3. Water quality and soil characteristics must be such that the quantity of water delivered to the soil will not degrade the quality of the soil to prohibit future irrigated or dryland agricultural use.

63 4. Slopes should not be greater than 2% for land which will be cultivated, but may be as steep as 5% for pasture land on coarse soils.

64

*3*Table 1. Classification of Zone two sediments (after Happ, 1971).

Place of Deposition	Name	Characteristics
part		Primary bedload temporarily at rest;
more		may be preserved in
or	Transitory Channel	durable channel fills
Channel	Deposits	lateral accretions. Segregations of larger
or		heavier particles, more persistent than
Channel	Lag Deposits	transitory channel deposits and including heavy mineral placers. Accumulations in abandoned or aggrading channel segments;
ranging		from relatively coarse bedload to fine-grained oxbow lake deposits. Point and marginal bars which may be preserved
Channel	Channel fills	channel shifting and added to overbank flood plain by vertical accretion deposits at top.
by		Fine-grained sediment deposited from
Channel Margin	Lateral accretion deposits	load of overbank flood water; including
suspended		levee and backland
natural	Vertical accretion	

<p>O Overbank flood plain spread</p>	<p>deposits</p>	<p>(backswamp) deposits. Local accumulations of bedload materials, from channels on to adjacent flood plains. Deposits derived from unconcentrated wash and soil creep on adjacent valley sides. Earthflow, debris avalanche and landslide deposits commonly intermix with marginal colluvium mudflows usually follow channels but also spill</p>
<p>Overbank flood plain chiefly slope</p>	<p>Splays</p>	<p>from channels on to adjacent flood plains. Deposits derived from unconcentrated wash and soil creep on adjacent valley sides. Earthflow, debris avalanche and landslide deposits commonly intermix with marginal colluvium mudflows usually follow channels but also spill</p>
<p>Valley margin Valley margin overbank. [See Table in Original]</p>	<p>Colluvium Mass movement deposits</p>	<p>from channels on to adjacent flood plains. Deposits derived from unconcentrated wash and soil creep on adjacent valley sides. Earthflow, debris avalanche and landslide deposits commonly intermix with marginal colluvium mudflows usually follow channels but also spill</p>

65 [See Illustration in Original]

66 @%DEPARTMENT OF STATE LANDS @%April 6, 1978 @%Mr. Don Crane @%c/o
Environmental Protection Agency @%1860 Lincoln Street @%Denver, CO 80295
@%Dear
Mr. Crane:

66 The following discussion should be considered the response of the
Montana
Department of State Lands to the specific questions expressed in Mr. Heine's
letter of February 21, 1978.

66 I. What are the hydrologic, geologic and biologic criteria which are
common to all alluvial valley floors?

66 A. Hydrologic aspects:

66 1. All "alluvial valley floors" must be traversed by an associated
stream. The stream may be ephemeral, intermittent or perennial in nature.

66 2. All "alluvial valley floors" must have water available from
sources
within the basin for plant use which would enhance plant growth and therefore
increase agricultural yield, including production for grazing that
contributes
significantly to the farming operation. The additional water available for
plant
growth may come from surface irrigation or subirrigation. Subirrigation does
not necessarily mean only a near surface water table but may be an equally as
important near surface capillary fringe that provides moisture to the rooting
zone.

66 B. Geologic aspects:

66 The "alluvial valley floor" geologically includes the valley bottom land containing the stream course and its associated combination of stream laid and other unconsolidated deposits. The stream channel, flood plain * and terraces of the valley bottom may be contrasted to upland areas containing largely residual or colluvial deposits. A study to distinguish between the valley bottom and upland areas should be conducted on the basis of geomorphic evidence indicating that the upland deposits are not related to valley processes. Upland deposits should consist of generally colluvial deposits composed of debris from sheet erosion or unconcentrated runoff together with talus, other mass movement accumulation and windblown deposits. The boundary between valley deposits and upland deposits is usually marked by a distinct change in slope from the flatter lying valley deposits.

66 * flood plain - that portion of the valley floor occupied by peak flows two out of every three years.

67 C. Biological aspects:

67 The key to the "alluvial valley floor" question is the plant/water relationship on the valley floor and the corresponding agricultural use of the vegetation. On all "alluvial valley floors" the valley bottom vegetation must benefit from additional moisture being supplied from subirrigation or flood irrigation or have the potential to be irrigated, and the vegetative species must have agricultural significance for one or more farms. The supply of additional available moisture must be demonstrated to be greater in amount and duration than that recharging the soil profile from individual precipitation events.

67 II. What samples, tests, observations and measurements should the agencies uniformly require to obtain the minimum information necessary to make a decision in each case?

67 Presuming that at this point the mine applicant has made a preliminary geologic and land use determination that the area may be an "alluvial valley floor" the plant moisture relationship must be thoroughly defined through the following tests:

68 A. Observation wells should be located and constructed to allow the delineation of any shallow groundwater systems that may potentially be affected by mining activities. These studies should include: 1) determination of the general (directions) of groundwater flow, 2) determination of dominant water level trends and the magnitude of fluctuations, and their causes, 3)

determination of the hydraulic connection between bedrock aquifers and non-indurated aquifers (both confined and unconfined). When hydraulic connection is evident, a program to reveal the qualitative/quantitative relationship between aquifers should be conducted to assess potential impacts that would affect the agricultural production on the alluvial valley floor as specified in 715.17(J) (1). 4) Placement of enough test holes to delineate the thickness and areal extent of the non-indurated aquifer material, and to allow the construction of accurate cross-sections or fence diagrams.

68 B. Soil moisture tubes should be installed to the maximum zone of rooting to observe the advancing front of moisture. Bi-weekly moisture probe measurements should be correlated to precipitation or runoff events (application of irrigation water) in order to identify the source of moisture being supplied to the root zone.

68 C. Tracers such as radioactive iodine should be injected at various depths to verify that the vegetation is rooting to a specific depth and is capable of uptaking moisture from that zone. An alternate technique would be to excavate a trench to observe the rooting depth, assuming that roots would be using any moisture from the maximum depth, the maximum root zone could be related to moisture probe data.

68 D. Vegetative production on the alluvial valley floor must be greater than on areas adjacent to the alluvial valley floor. Cropping records may be used to verify production or vegetation clipping should be done in order to compare adjacent areas to verify significantly greater production on a potential alluvial valley floor. In addition to increased productivity, "alluvial valley floors" may provide succulent forage for a longer duration than adjacent areas.

69 E. A map should be provided showing:

69 1. The break between the valley floor and upland areas. The valley floor consists of a stream channel, a flood plain, and terraces as contrasted to uplands which slope upwards from the flatter lying valley floor.

69 2. Areas of varying agricultural usage should be delineated and corresponding cropping records supplied if available.

69 III. Can complete identification be determined at any time of year during a short-term investigation or are seasonal or sequential observations overtime required?

69 An area that obviously has subirrigated or irrigated agricultural usage, may readily be designated an alluvial valley floor; however, its essential hydrologic functions as specified under 715.17(J) (1), must be assessed under a program that will reveal seasonal fluctuations in both saturated and

unsaturated water levels as they relate to the use or potential use of that moisture by agricultural crops. The critical period for observation are the summer months when evapotranspiration exceeds precipitation and water is a limiting factor to plant growth. Sequential moisture probe readings must be taken during the summer to observe the advancing front of moisture to understand

if it relates to precipitation, subirrigation, flood irrigation or runoff events. Measurements of water or moisture levels during the wet months or months when vegetation is dormant may or may not be indicative of moisture availability during the plant growth moisture stress periods.

69 IV. What criteria should be used to identify adjacent or associated areas or formations that, if disturbed by mining, would interfere with the hydrologic function of an alluvial valley floor?

69 Once an area has been designated an alluvial valley floor it becomes less important to draw a fine line distinguishing between the alluvial valley floor and areas not fitting the alluvial valley floor criteria, but rather the emphasis should be on understanding the hydrologic system as it relates to the essential hydrologic functions on the alluvial valley floor. Therefore, the decision on where mining can occur without interrupting, discontinuing or precluding farming on the alluvial valley floor nor materially damaging the quantity or quality in surface and groundwater systems that supply such valley floors, should be based on an understanding of the essential hydrologic functions of the alluvial valley floors, alluvial and bedrock aquifer relationships, and surface water alluvial valley floor interactions.

70 In order to understand the relationship of adjacent areas to the hydrologic functions on the alluvial valley floors, the following information should be collected and analyzed:

70 A. Provide accurate cross-sections of the alluvial fill-bedrock contact.

70 B. Using a series of wells placed across the valley floor the amount of water moving through the alluvial aquifer should be determined and the water quality characterized. Pump tests would be necessary to determine the hydraulic characteristics of the aquifer.

70 C. Paired wells should be placed along the alluvial valley floor-bedrock contact so that water levels and water quality can be compared in the adjacent aquifer systems. Pump testing would also help determine if there is hydraulic continuity between the two systems. Changes in stream flow and changes in bedrock aquifers should be related to changes in water availability on the valley floor.

70 D. Water level data from completed wells in the alluvial valley floor

and any underlying aquifers can be used to determine if there is a potential for hydraulic interaction within the multi-aquifer system. Lower water levels in the underlying aquifers than in the alluvium, together with a decrease in head with depth, would suggest a potential for the downward movement of water from the alluvium. Higher water levels in the underlying aquifers than in the alluvium, together with an increase in head with depth, would suggest a potential for the upward movement of water from the underlying aquifers into the alluvium.

71 E. The study should assess the potential for hydraulic reversals towards a mine pit that would impact production on the alluvial valley floor.

71 F. Study design should provide for assessment of the qualitative/quantitative relationship between the bedrock aquifer and surface water systems as they relate to the essential hydrologic functions of the alluvial valley floor.

71 In summary, the Department of State Lands envisions the approach to designation of alluvial valley floors to include the following steps:

71 1. Make a preliminary determination of uplands versus possible alluvial valley floor using geomorphic and agricultural land use information.

71 2. Collect data on the valley bottom to reveal the plant moisture relationship and verify how it relates to irrigation or subirrigation. The significance of the vegetative production to the farming operation must also be investigated.

71 3. Once an area meeting all the requirements of the alluvial valley floor is discovered then an analysis of the adjacent hydrologic system as it relates to the essential hydrologic functions on the alluvial valley floor should be made. Therefore, the decision pertaining to what may be mined should be based on potential impacts to the essential hydrologic functions of the alluvial valley floor and a full knowledge of the hydrologic interactions in the entire hydrologic system.

71 In the process of reviewing the legislation and legislative history pursuant to protection of "alluvial valley" floors certain terms still remain unclear that are vital to the interpretation of "alluvial valley" floors. We feel that the following terms need further clarification:

71 1. What is meant by irrigation or flood irrigation?

71 2. How is production on a valley floor determined to be significant to a farming operation?

71 3. Using the interpretation that areas possessing "alluvial valley" floor qualities that are insignificant to the farming operation may be mined only if the hydrologic functions can be restored presents some problems. At

what point do you stop looking at minor tributaries for "alluvial valley" floor qualities?

72 Possibly these terms should not be defined in order to allow flexibility in site by site determinations; however, we would appreciate your opinion regarding these concerns.

72 Although this paper is not in legal form, hopefully it will provide insight for drafting an alluvial valley floor guideline. We would be happy to participate in further work that is done in this regard.

72 Sincerely, Brace Hayden, Administrator Reclamation Division

72 sm

72 c: Mr. Walter Heine

73 Senator FORD. The next witness, who is from the Department of Agriculture, will be Mr. Victor H. Barry, Deputy Administrator for Programs for the Soil Conservation Service.

73 Mr. Barry, we are delighted to have you with us this morning. You may proceed with your statement or insert it in the record.

73 Will you identify the gentleman who is at the table with you?

73 Mr. BARRY. Thank you, Mr. Chairman. With me is Gerald Root, soil conservationist and staff specialist for the rural abandoned mine program for the Soil Conservation Service. Our statement is short, and I will read it in total, if you don't mind.

73 Senator FORD. You may proceed.

STATEMENT OF VICTOR H. BARRY, JR., DEPUTY ADMINISTRATOR FOR PROGRAMS,
SOIL CONSERVATION SERVICE, U.S. DEPARTMENT OF AGRICULTURE, ACCOMPANIED BY
GERALD
W. ROOT, SOIL CONSERVATIONIST, PROGRAM OPERATIONS BRANCH, SOIL CONSERVATION
SERVICE

73 Mr. BARRY. The U.S. Department of Agriculture appreciates the opportunity to appear before your committee to discuss our progress to date in implementing section 406 of Public Law 95-87, "Surface Mining Control and Reclamation Act of 1977."

73 The Soil Conservation Service (SCS) was delegated responsibility for implementation of section 406, "Reclamation of Rural Abandoned Lands by the Secretary of Agriculture."

73 I am Victor H. Barry, Jr., Deputy Administrator for Programs, Soil Conservation Service, and am responsible for the development and operation of SCS programs including section 406.

73 The Surface Mining Control and Reclamation Act of 1977 was signed into

law on August 3, 1977. Section 406 of the law authorizes the Secretary of Agriculture to enter into agreements of not more than 10 years with landowners and/or operators who control the land to provide for land stabilization, erosion, sediment control, and reclamation; and to issue rules and regulations to carry out the program.

73 Since passage of the law, the Soil Conservation Service (SCS), the U.S. Department of Agriculture (USDA), has taken the following actions to implement this program:

73 1. SCS served on an interdepartmental task force comprised of 11 Federal agencies to initially develop program framework authorized by title IV of Public Law 95-87.

73 2. Delegation of authority from the Secretary of Agriculture to the Administrator of SCS to administer the abandoned mine program and other responsibilities assigned under Public Law 95-87 was published in the Federal Register on October 13, 1977.

73 3. In October of 1977, CSS assisted the interdepartmental task force to obtain comment via public meetings to identify public concerns in program development.

73 4. From November to December 1977, a rough draft of proposed rules and regulations was prepared and circulated to SCS State offices to identify program issues and the need for additional legal counsel on the law. Policy issues and program alternatives were identified.

74 5. From January to February 1978, we circulated a second draft of proposed rules and regulations within USDA and completed an environmental assessment. These actions led to the preparation of a draft program impact analysis and a draft environmental impact statement.

74 6. On March 10, 1978, a memorandum of understanding between the U.S. Department of the Interior and USDA became effective. This memorandum sets forth working arrangements between the two departments to implement Public Law 95-87.

74 7. On April 7, 1978, a draft regulatory impact analysis was made as being available for the proposed program. This analysis is required by Executive Order 12044 dated March 24, 1978, and replaces the Executive Order on Economic Impact Analysis.

74 8. On April 11, 1978, proposed rules and regulations to conduct a rural

abandoned mine program were published in the Federal Register.

74 9. On April 12, 1978, a notice of availability of a draft program environmental impact statement on the program was published by the Environmental Protection Agency.

74 10. Supplemental funds for program operations in fiscal year 1978 are being transferred from the U.S. Department of the Interior's Office of Surface Mining to USDA and SCS.

74 11. A mandatory 45-day public comment period is required after proposed rules and regulations are published. This date ends May 30, 1978, for the proposed regulations, and June 5, 1978, for the draft environmental impact statement.

74 12. After public comment, final rules and regulations, a final environmental impact statement, and a final draft regulatory impact analysis must be prepared. We anticipate these will be available on or about July 15, 1978.

74 13. No administrative action can be taken until 30 days after final program regulations and an environmental impact statement are available.

74 14. Informal surveys have been made within the SCS organization in the coal-producing States to determine program interest and potential for contracts this year. The survey indicates there is a potential for 100 or more contracts.

74 This briefly summarizes our progress to date, Mr. Chairman. If you have any questions, we will respond orally or in writing

74 We have copies for the record of the U.S. Department of the Interior and USDA memorandum of understanding, the "Proposed Policy and Procedures for Implementing the Rural Abandoned Mine Program, the Draft Impact Analysis, and the Draft Environmental Impact Statement."

74 [The documents follow:]

75 MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENT OF THE INTERIOR AND THE DEPARTMENT OF AGRICULTURE RELATIVE TO THE SURFACE MINING CONTROL AND RECLAMATION ACT OF 1977

75 This Memorandum of Understanding effective this 10th day of March, 1978, by and between the U.S. Department of the Interior, hereinafter referred to as Interior, and the U.S. Department of Agriculture, hereinafter referred to as Agriculture, is entered into under the authority of the Surface Mining Control and Reclamation Act of 1977, Public Law 95-87, 91 Stat. 445 et seq. (30 U.S.C.

1201 et seq.).

75 The Surface Mining Control and Reclamation Act of 1977 assigns certain responsibilities to each Department relative to the control of active surface coal mining and the reclamation of abandoned mine lands.

75 Therefore, the purpose of this Memorandum of Understanding is to establish a basis for promoting full cooperation, coordination, and liaison between Interior and Agriculture to implement responsibilities assigned under law.

75 Within the limits of each Department's authorities and resources, it is mutually agreed:

76 A. General

76 1. Interior and Agriculture will coordinate and cooperate with States to assure that all reclamation activities are compatible with the reclamation programs and objectives established by Public Law 95-87.

76 2. The Interior representative to coordinate reclamation liaison activities with Agriculture will be the Director, Office of Surface Mining.

76 3. The Agriculture representative to coordinate reclamation liaison activities with Interior will be the chairman of the USDA-RECLAM coordinating committee.

76 4. Agriculture will provide technical counsel to Interior relative to reclamation of land for agricultural and forestry uses.

76 B. Supplemental Agreements

76 Agencies of Interior, as needed, will enter into separate agreements with appropriate agencies of Agriculture for direct assistance in implementing all titles of Public Law 95-87.

76 This Memorandum becomes effective on the date of the last signature.

76 Either party to this Memorandum may terminate participation upon written notice to the other party 120 days in advance of the effective date of termination.

76 This Memorandum may be revised or amended at any time by mutual consent of both parties; and will be reviewed every 3 years by both parties.

76 * * *

78 15312

78 [3410-16]

78 DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

78 [7 CFR Part 632]

78 RURAL ABANDONED MINE PROGRAM

78 Proposed Policy and Procedures for Implementing Program

78 AGENCY: Soil Conservation Service (SCS), U.S. Department of Agriculture (USDA).

78 ACTION: Proposed rulemaking.

78 SUMMARY: Soil Conservation Service proposed policy and requirements to carry out the Rural Abandoned Mine Program. The program provides longterm Federal, technical, and financial assistance to land users to reclaim, conserve, and develop certain abandoned coal-mined lands in rural areas.

78 DATES: Comments must be received on or before May 30, 1978.

78 ADDRESS: Comments should be sent to: David P. Overholt, Director, Conservation Operations Division, Soil Conservation Service, Room 6132, South Agriculture Building, Washington, D.C. 20013, 202-447-7245.

78 SUPPLEMENTARY INFORMATION:

78 The proposed regulations are to implement section 406 of Pub.L. 95-87, 91 Stat. 460 (30 U.S.C. 1236).

78 Title IV of Pub.L. 95-87 creates an Abandoned Mine Reclamation Fund and establishes a Federal, State, Indian and Rural Abandoned Mine Program (RAMP). The Secretary of the Interior is administratively responsible for all abandoned mine programs except RAMP. Regulations covering all other aspects of the abandoned mine fund and programs are to be published in 30 CFR, Chapter VII, Parts 840 and 841, on or about April 14, 1978.

78 A final program environmental impact statement (EIS) will be filed before the program becomes operational. Notice of availability of the draft EIS will be published on or about April 14, 1978.

78 Public meetings on the proposed regulations will be held. Notice of specific dates and locations of these meetings will be published in the FEDERAL REGISTER within the next few weeks.

78 The proposed regulations are believed to be in compliance with the March 24, 1978, Executive Order 12044. A draft Regulatory Impact Analysis is available from SCS at the address specified above.

78 Dated: April 6, 1978.

78 (A new program - Catalog of Federal Domestic Assistance tentative program number 10.910.)

78 R. M. DAVIS, Administrator, Soil Conservation Service.

78 It is proposed to add new Part 632 to Title 7 CFR to read as set forth below:

78 PART 632 - RURAL ABANDONED MINE PROGRAM

78 Subpart A - General

78 Sec.

78 632.1 Purpose and scope.

78 632.2 Objectives.

78 632.3 Responsibilities.

78 632.4 Definitions.

78 Subpart B - Qualifications

78 632.10 Applicability.

78 632.11 Availability of funds.

78 632.12 Funding priorities.

78 632.13 Eligible lands and water.

78 632.14 Eligible land users.

78 632.15 Eligible reclamation and treatment.

78 632.16 Special projects.

78 Subpart C - Participation Procedures

78 632.20 Application for assistance.

78 632.21 Conservation plan.

78 632.22 Agreements.

78 632.23 Methods of applying planned land use and treatment.

78 632.24 Access to land unit and records.

78 Subpart D - Cost-Share Procedures

78 632.30 Cost-share rates.

78 632.31 Cost-share payments.

78 Subpart E - Appeals and Violations

78 632.40 Appeals.

78 632.41 Violations.

78 632.42 Violation procedures.

78 Subpart F - Environment

78 632.50 Environmental assessment.

78 632.51 Accord with environmental laws and orders.

78 632.52 Identifying typical classes of action.

78 AUTHORITY: Sec. 406, Pub.L. 95-87; 91 Stat. 460; (30 U.S.C. 1236).

78 Subpart A - General

78 @ 632.1 Purpose and scope.

78 (a) The purpose of this part is to set forth the Soil Conservation Service (SCS) rules and regulations to carry out the Rural Abandoned Mine Program (RAMP) under Section 406, Pub.L. 95-87; 91 Stat. 460; (30 U.S.C. 1236).

78 (b) The RAM Program:

78 (1) Assists land users, on a voluntary basis through conservation districts, to develop conservation plans and apply conservation treatment for the reclamation, conservation, and development of eligible coal mined lands and water; and

78 (2) Provides, through long-term agreements, based on an approved conservation plan, cost sharing to land users for establishing land use and conservation treatment on these lands.

78 @ 632.2 Objectives.

78 (a) The objectives of the program are to protect people and the environment from the adverse effects of past coal mining practices and to promote the development of the soil and water resources of unreclaimed mined lands by:

78 (1) Stabilizing mined lands;

78 (2) Controlling erosion and sediment on mined areas and areas affected by mining;

78 (3) reclaiming lands and water for useful purposes; and

78 (4) Enhancing water quality or quantity where disturbed by mining practices.

78 @ 632.3 Responsibilities.

78 (a) RAMP is administered by the U.S. Department of Agriculture (USDA) through SCS.

78 Delegation of responsibility for the program is contained in 7 CFR 601.1(h).

78 (b) The following SCS officials are responsible (7 CFR 600.2, 600.4, and 600.6) for program direction and guidance:

78 (1) National level - Administrator.

78 (2) State level - State Conservationist or delegated representative (Responsible Federal Official (RFO)).

78 (c) The primary public contact for program assistance is the District Conservationist located in local SCS field offices.

78 (d) SCS is assisted by other USDA agencies in accordance with existing authorities and agreements in carrying out the program.

78 (e) SCS coordinates program activities with other reclamation programs carried out by the Office of Surface Mining, the U.S. Department of the Interior; State reclamation agencies; and Indian tribes to insure that requests are serviced under the appropriate reclamation program.

78 (f) SCS consults with State and local reclamation committees to obtain recommendations on program conduct and public participation. The SCS State Conservationist may use existing reclamation committees or organize new committees for this purpose. The State committee is chaired by the State Conservationist when functioning for the purposes of this program. Membership, as appropriate, may include representatives of the State reclamation agency, the coal industry, the State soil conservation agency, and other interested agencies or groups. Local committees, if needed, are organized on a multicounty, county, conservation district, or other appropriate basis similar to the State committee.

78 @ 632.4 Definitions.

78 Abandoned mine lands. Unreclaimed coal-mined lands that existed before August 3, 1977, and for which there is no continuing reclamation responsibility on the part of a mine operator, permittee, or his agent under State or Federal law.

78 Agreement. A contract between SCS and the land user which includes the conservation plan and provides for the cost sharing of conservation treatment.

78 Average costs. The calculated cost, determined by recent actual costs and current cost estimates, considered necessary for carrying out a conservation practice or an identifiable unit of a conservation practice.

79 Conservation district. A legal subdivision of State government responsible for developing and carrying out programs of soil and water conservation with which the Secretary of Agriculture cooperates under the Soil Conservation and Domestic Allotment Act of 1935.

79 Conservation plan. A conservation and development plan as referred to in Pub.L. 95-87, consisting of a written record of land user decisions on proposed use and conservation treatment of eligible lands and water that will protect, enhance, and maintain the resource base. A conservation plan contains a schedule for conservation treatment as a part of the cost-sharing agreement.

79 Conservation practice. Specific conservation treatment applied to the land according to current standards and specifications in SCS Technical Guides.

79 Contracting officer. The SCS official authorized to enter into and administer RAMP agreements.

79 Cost. The monetary amount actually paid or obligated to be paid by the land user for equipment use, materials, and services for carrying out a conservation practice or identifiable unit. If the land user uses his own resources, it includes the computed value of his own labor, equipment use, and materials.

79 Cost-share payments. Payment made to land users at established rates as specified in agreements for carrying out a conservation practice or an identifiable unit of such practices according to the agreement.

79 Financial burden. The land user's cost of reclamation that cannot be expected to be recovered within the agreement period and that would probably prevent participation in the program. The land user must sign a statement to substantiate financial burden.

79 Identifiable unit. A component of a conservation practice that can be clearly identified as a step in carrying out the conservation practice.

79 Inadequately reclaimed. Reclamation completed before August 3, 1977, that does not meet SCS standards and specifications for surface mine reclamation and for which there are no continuing reclamation responsibilities on the part of mine operator, permittee, or his agent under State or other Federal law.

79 Landrights. An interest acquired by fee simple title, easements, and rights-of-way to occupy or use land, buildings, structures, or other improvements.

79 Land user. Any person, partnership, firm, company, corporation, association, trust, estate, other entity, or agent that owns or has management control of the land during the agreement period or owns water rights on eligible lands. Also included are State or local public entities that have acquired land for the purpose of implementing agreements.

79 Main benefits. The principal values or benefits that can be identified, and/or quantified as a result of reclamation. Main offsite benefits are those values that accrue to the public outside the boundary of the eligible area as a result of the reclamation. Main onsite benefits are those that accrue to the participant. Examples of principal values or benefits include reduction of erosion or sediment damage, elimination of public safety or health hazard, improvement of water quality or improved scenic quality of rural communities.

79 Reclamation committee. A committee on a local or State level consisting of representatives of Federal and State agencies and other organizations that have responsibilities or interest in abandoned mine reclamation. The committee provides guidance to SCS on the conduct of the RAMP and is chaired by an SCS representative when functioning for this purpose.

79 Specified maximum costs. The maximum amount of money that will be cost shared for an identifiable unit or conservation practice.

79 Standards and specifications. Requirements that establish the minimum acceptable quality level for planning, designing, and installing a conservation practice so it achieves its intended purpose. SCS standards and specifications are contained in Part IV of the SCS field office technical guide and are designed to be sound and practicable under local conditions.

79 Water rights. Any interest acquired in, priority established for, or permission obtained for the use of water.

79 Subpart S - Qualifications

79 @ 632.10 Applicability.

79 This program applies to any county, conservation district, or other designated area of need that had abandoned or inadequately reclaimed coalmined lands within its borders before August 3, 1977.

79 @ 632.11 Availability of funds.

79 (a) The provisions of the program are subject to the appropriation by Congress of funds from the Abandoned Mine Reclamation Fund and the transfer of

as much as 20 percent of these funds from the Office of Surface Mining to SCS.

79 (b) The SCS Administrator, in designating States for program participation, shall consider the recommendations of state conservationists and the following criteria:

79 (1) Severity of the problem and the acreage of eligible lands and water to be reclaimed as indicated in current inventories of abandoned mine lands;

79 (2) The degree of public interest as indicated by the State reclamation agency, conservation districts, and other interested agencies, groups and individuals; and

79 (3) Status of existing State reclamation program.

79 (c) If a State is designated for program participation, the SCS state conservationist, in consultation with the State reclamation committee, shall consider the following criteria in designating areas for program participation:

79 (1) Severity of the problem including acreage of eligible lands and water and priorities for reclaiming them;

79 (2) Degree of interest on the part of land users in program participation; and

79 (3) Other pertinent information.

79 @ 632.12 Funding priorities.

79 (a) Priorities for funding reclamation work are determined by the primary purpose of the reclamation in the following order:

79 (1) Protection of public health, safety, general welfare, and property from extreme danger of adverse effects of coal-mining practices (extreme danger means a condition that can be expected to cause substantial harm to persons and property);

79 (2) Protection of public health, safety, and general welfare from diffuse adverse effects of coal mining; and

79 (3) Restoration of the environment and land and water resources where previously degraded by the adverse effects of coal mining practices. First consideration in this category shall be the reduction of offsite damage affecting the public.

79 @ 632.13 Eligible lands and water.

79 (a) Lands and water eligible for reclamation are those that were mined for coal, or that were affected by coal mining processes, and abandoned or inadequately reclaimed before August 3, 1977. These lands and water are not eligible if:

79 (1) They are under Federal ownership and operation; or

79 (2) Continuing reclamation responsibility rests with the mine operator, permittee or his agent under State or other Federal laws.

79 (b) If abandoned lands are under contract or agreement to be remined for coal or other minerals, they are not eligible. However, this does not preclude using remining as a reclamation technique with reduction in the cost-share payment equal to value of coal when it is determined to be the most practical reclamation technique.

79 @ 632.14 Eligible land users.

79 Eligible land users are landowners, owners of water rights, residents, tenants, or their agents operating as individuals, partnerships, associations, corporations, estates, trusts, or non-Federal public entities who control eligible lands and water. Land users may participate by acting individually or jointly with other eligible land users. However, joint participation is required if the primary purpose of reclamation is enhancement of water quality of quantity.

79 @ 632.15 Eligible reclamation and treatment.

79 (a) Eligible lands and water may be reclaimed by eligible lands users for cropland, hayland, pasture, rangeland, forest land, fish and wildlife land, and the recreation of other uses associated with these land uses. Other land uses proposed by public entities for public use and benefit may be approved by the SCS state conservationist. Reclaimed land use is determined by the objectives of the land user, compatibility of the land use with surrounding land use, and the technical feasibility or restoring the lands and water for the selected land use.

79 (b) The maximum acreage of eligible lands and water that an eligible landowner may offer for agreement is 320 acres.

79 (c) Conservation treatment eligible for Federal cost sharing includes the combination of practices needed for the conservation and development of the soil, water (excluding stream channelization), woodland, wildlife, recreation resources, and the agricultural productivity of the land. Examples of conservation practices used for reclamation include land shaping and grading,

critical area planting, diversions, waterways, grade stabilization structures, and sediment basins.

79 (d) Applied conservation treatment is to meet applicable Federal and State reclamation standards and specifications as contained in local SCS technical guides.

79 (e) SCS state conservationists, in consultation with the State reclamation committee, are to;

79 (1) Determine what conservation treatment is eligible for cost sharing;
and

79 (2) Develop and maintain, when applicable, a list of average costs of applying conservation treatment to eligible lands and waters.

79 @ 632.16 Special projects.

79 (a) The SCS state conservationist may approve the following types of special projects:

79 (1) Field trials or demonstration projects proposed by the State reclamation committee that support program objectives and priorities.

79 (2) Projects to enhance water quality and quantity where coal mining disturbed local water supplies and where joint action by a group of eligible land users in cooperation with Federal and State agencies is needed to restore the water resource.

79 Subpart C - Participation Procedures

79 @ 632.20 Application for assistance.

79 (a) Land users must apply for program assistance through the local SCS field office. Applications are reviewed by the SCS district conservationist, in consultation with the conservation district, and/or local reclamation committee to verify eligibility and assign a program priority. Applications that are incomplete, ineligible, or technically unfeasible, will be returned to the applicant with a statement of the reasons for disapproval.

79 (b) Eligible applicants are serviced within a priority according to the following criteria:

79 (1) Program funding priority assigned as stated in Paragraph 632.12.

79 (2) Date of application.

79 (3) Land user's ability to proceed.

79 (4) Feasibility of applying proposed land uses and the benefits to be derived from treatment.

79 @ 632.21 Conservation plan.

79 (a) Responsibility. Land users are responsible for developing a conservation plan in cooperation with the conservation district, and/or SCS, which will serve as a basis for a cost-sharing agreement.

79 (b) Objectives and priorities. The conservation plan is to provide for the appropriate program objectives and priorities as stated in @@ 632.2 and 632.12, and meet the definition of a conservation plan as defined in @ 632.4.

79 (c) Review and verification. (1) In areas served by conservation districts, conservation plans are to be reviewed and verified by the district board to insure that planned land use and treatment is compatible with surrounding land uses and that proposed assistance is consistent with district priorities. In areas not served by conservation districts this review will be performed by the local reclamation committee.

79 (2) If conservation plans include lands within or adjacent to Federal lands, the plan is to be reviewed with the appropriate Federal land management agency to insure that the planned land use is compatible with that of the surrounding area.

79 (3) Land users are responsible for insuring that the proposed land use and treatment is compatible with local land use ordinances.

79 (d) Approval. Proposed land use and conservation treatment contained in the plan are to be agreed to by both SCS and the land user. The district conservationist and the land user are to sign the conservation plan to indicate approval.

79 @ 632.22 Agreements.

79 (a) Basis for cost sharing. A land user who has an approved conservation plan may enter into an agreement with SCS to receive Federal cost-share assistance. All land users who control or share control of the land for the proposed agreement period are to sign the agreement. A land user may be required to furnish evidence of management control; i.e., long-term lease, recorded deed, or land contract. The SCS contracting officer signs agreements after determining that all documents meet program requirements.

79 (b) Effect of agreement. A land user who signs an agreement is obligated to apply or arrange for application of the land use and conservation treatment as scheduled in the conservation plan according to approved standards and specifications.

79 (c) Permits, landrights and water rights. The land user is responsible

for obtaining the permits, landrights, and water rights, required to perform the planned work.

79 (d) Operation and maintenance. The land user is responsible during the agreement period for the operation and maintenance of applied conservation treatment.

79 (e) Period of agreement. The agreement period is to be not less than 5 nor more than 10 years. An agreement is to extend for at least 3 years after the application of the last cost-shared conservation treatment to insure adequate establishment of vegetation. Exceptions to the 3-year provision may be granted for unusual circumstances by the state conservationist.

79 (f) Transfer of agreement. (1) If during the agreement period, all or a part of the right and interest in the land is transferred by sale or other transfer action, the agreement is terminated on the land unit that was transferred and the land user: (i) Forfeits all right to any future cost-share payments on the transferred land units;

79 (ii) Must refund all cost-share payments that have been made on the transferred land unit unless the new land user becomes a party to the agreement as provided in paragraph (f) (2) of this section.

79 (2) If the New land user becomes a party to the agreement:

79 (i) He is to assume all obligations of the previous land user on the transferred land unit; and (ii) The agreement with the new land user is to remain in effect with the original terms and conditions; and

79 (iii) The agreement is to be modified in writing to show the changes caused by the transfer. If the modification is not acceptable to the contracting officer, the provisions of paragraphs (f) (1) (i) and (ii) of this section apply.

79 (3) The transfer of all or part of a land unit by a land user does not affect the rights and obligations of other land users who have signed the agreement.

81 (g) Revision of agreement. (1) An agreement previously entered into with a land user may be modified only with approval by the state conservationist or authorization under established policies. No agreement may be modified unless it is determined that the modification is desirable to carry out the program purposes or to facilitate the practical administration of the program.

81 (2) Agreements may be modified to add, delete, substitute, or reapply conservation treatment when:

81 (i) Applied conservation treatment failed to achieve the desired results through no fault of the land user:

81 (ii) Applied treatment deteriorated because of conditions beyond the control of the land user; or

81 (iii) Other treatment is substituted that will achieve the desired results.

81 (h) Joint agreements. A land user may enter an agreement jointly with other land users subject to the 320 acres maximum limitation per landowner. However, joint participation is permitted only if it will result in better land use and treatment than individual participation or if it is required by §§ 632.14 and 632.16(a) (2).

81 (i) Termination of agreements. Agreements may be terminated by mutual consent of the signatories only if the state conservationist determines that the termination is authorized under established policies and is in the public interest.

81 @ 632.23 Methods of applying planned land use and treatment.

81 (a) State conservationists shall develop criteria specifying when SCS will assume Federal contracting responsibilities to apply planned land use and conservation treatment. Criteria will consider type of equipment required, type and amount of practices required, estimated costs of contract, and the needs of the land user. Federal contract procedures shall be in accordance with 41 CFR, Chapters I and IV, if the Federal cost share of the cost is less than 100 percent (see @ 632.30), a land user must put up his share of the cost before the contract is awarded.

81 (b) A land user may assume contracting responsibilities or arrange to perform the treatment specified in the agreement. In this case, cost-share payments to the land user are made in accordance with @ 632.31.

81 @ 632.24 Access to land unit and records.

81 Any authorized SCS employee or agent shall have the right of access to land under application or agreement to examine any program records and to ascertain the accuracy of any representations made in the application or agreement. This includes the right to furnish technical assistance and to inspect work done under the agreement.

81 Subpart D - Cost-Share Procedures

81 @ 632.30 Cost-share rates.

81 (a) Cost-share rates paid by the Federal Government shall be established by the SCS Administrator in accordance with the following criteria.

81 (1) For up to 120 acres: The basic rate shall be 80 percent of the cost

of carrying out land use and conservation treatment specified in the agreement.
The basic rate may be decreased up to 20 percent to reflect the income-producing potential of the land after reclamation, or increased up to 20 percent if there is land user financial burden and the main benefits of reclamation are offsite (accrue to the public).

81 (2) For 121 to 320 acres: The basic rate determined in @ 632.30(a) (1) shall be reduced proportionately by up to 0.5 percent per acre.

81 (3) One cost-share rate shall be used for each agreement by calculating a weighted average rate for the entire acreage offered for agreement.

81 @ 632.31 Cost-share payment.

81 (a) Basis for cost-share payment. Cost-share payments are to be made at rates specified in the agreement. The cost-share payment is to be determined by one of the following methods:

81 (1) Average cost.

81 (2) Actual cost but not more than the average cost.

81 (3) Specified maximum cost.

81 If the average cost or the specified maximum cost at the time of the starting the installation of a conservation practice or identifiable unit is less than the cost specified in the agreement, payment is to be made at the lower rate. If the cost at the start of installation is higher payment may be at the higher rate. An agreement modification is necessary if SCS determines that the higher cost is a significant increase in the total cost-share obligation. Cost-share payment shall not be made until the modification reflecting the increase is approved. If the higher costs are not significant, cost-share payments may be provided funds are available.

81 (b) Time of payment. Cost-share payments are to be made to the land user after a practice or an identifiable unit has been satisfactorily applied. The land user is to submit claims for payment to the district conservationist no later than September 30 of the year after application. Late claims require approval of the state conservationist before payment can be made. A claim is to show the proportion of each land user's contribution to the applied practice or identifiable unit.

81 (c) Approval. The district conservationist must certify that a practice

or identifiable unit has been satisfactorily applied before SCS can make costshare payments.

81 (d) Ineligible claim. A land user is not eligible to receive cost-share payments for a practice or an identifiable unit that was not carried out under program requirements.

81 (e) Authorization for payment. (1) Materials or services needed to carry out agreements are to be obtained by land users. Agreements may provide that part or all of the cost-share payment for a practice or identifiable unit be made directly to suppliers of materials or services. The materials or services must be delivered or performed before payment is made.

81 (2) The contracting officer shall authorize payment for materials or services not exceeding:

81 (i) The cost share of the material or service used; or

81 (ii) The total cost share of the practices or identifiable unit if requested by the land user.

81 (3) The land user who purchases materials or services to carry out agreements is responsible for them until the district conservationist determines that the material or service was used for the intended purpose. If a material or service cost shared by SCS is used for a purpose other than to carry out the agreement, the land user is indebted to the United States for the cost of the misused material or service. This indebtedness is to be repaid to SCS as a refund or withheld from cost-share payments otherwise due the land user under the agreement.

81 (4) SCS has the right to inspect materials or services, and to take samples for testing. Inspections by SCS will not be necessary if SCS considers State inspection regulations adequate.

81 (5) Materials or service must meet the quality standards as specified. SCS may make exceptions for materials or services that do not meet the standards only if they will satisfactorily serve the intended purpose. SCS shall deduct from the cost-share payment the difference between the price of the materials or services specified and the actual value of the different materials or services.

81 (f) Division of cost-share payments. Federal cost-share payments made directly to suppliers of materials or services are credited to the land user who was issued the authorization. The remainder of the cost share is credited to the land user who carried out the remainder of the practice or identifiable

unit. If more than one land user contributed to carrying out a practice or identifiable unit, the cost-share payment is to be divided proportionately according to the contribution made by each of the land users. Furnishing a landright or water right is not a contribution for cost-share payment purposes.

82 (g) Other aid. Non-Federal public entities may furnish part of the land user's portion of the cost of applying a practice or identifiable unit with not reduction in the Federal cost share.

82 (h) Assignments and claims. Land users may not assign cost-share payments except as provided under the authority of section 203, Title 31, U.S.C. as amended, and section 15, Title 41, U.S.C. as amended. Federal cost-share payments due any land user are not subject to claims for advances except as provided in this section.

82 Subpart E - Appeals and Violations

82 @ 632.40 Appeals.

82 (a) Before signing an agreement. A land user may verbally request the contracting officer or the district conservationist to reconsider decisions that would affect the agreement before it is signed. However, requests for reconsideration of eligible conservation treatment, cost-share rate, average costs, or specified maximum costs will not be honored.

82 (1) If verbal agreement is not reached, the land user may make a written request within 30 days after receiving notice of the decision on his verbal request. The contracting officer or the district conservationist shall then have 30 days in which to make a decision and notify the land user.

82 (2) If a land user is dissatisfied with, the decision of the contracting officer or the district conservationist, he may file a written appeal with the state conservationist within 30 days after receipt of the decision. The state conservationist's decision shall be final. The land user shall be notified of the decision within 30 days after the appeal is filed.

82 (3) If the land user fails to comply with the time limits for reconsideration or appeal as provided in paragraphs (a)(1) and (2) of this section, the decision of the contracting officer or the district conservationist is final.

82 (b) After the agreement is signed. Disputes pertaining to questions of fact under an agreement, except agreement violations, that are not settled by written agreement shall be referred to the state conservationist for a decision

within a reasonable period of time. The following applies on disputes:

82 (1) The state conservationist shall notify the land user, in writing, that the dispute will be considered on a specified date. This date shall be not less than 30 days after the land user receives the notice.

82 (2) Within 30 days after receiving the state conservationist's notice, the land user may file a request to appear and present oral and other evidence.

If the land user does not request an appearance, the state conservationist will decide the dispute on the evidence available to him. The state conservationist shall inform the land user of his decision in writing.

82 (3) Land users may appeal state conservationist decisions to the Administrator within 30 days after receiving the decision. The state conservationist shall submit the record before him, which will include his decision, to the Administrator within 20 days after the land user's appeal is received by the Administrator. He may also file a brief or statement with the Administrator. The Administrator's decision shall be final. The land user shall be notified of this decision in writing.

82 (c) Filing of documents. A document is considered filed when it is received in the office of the person concerned.

82 @ 632.41 Violations.

82 (a) Actions causing violation. The following actions constitute violation of an agreement by a land user:

82 (1) Knowingly or negligently damaging or causing conservation treatment to be impaired.

82 (2) Adopting land use or treatment tends to defeat the program purposes during the period of the agreement.

82 (3) Failing to comply with the terms of the agreement.

82 (4) Filing a false claim.

82 (5) Misusing an authorization.

82 (b) Effect of violation. - (1) Agreement to be terminated. (i) By signing an agreement, the land user agrees to forfeit all rights to further cost-share payments under an agreement and to refund all cost-share payments received, if the contracting officer, with the approval of the state conservationist, determines that:

82 (A) There was a violation of the agreement during the time the land user had control of the land; and

82 (B) The violation was of a nature as to warrant termination of the

agreement.

82 (ii) The land user shall be obligated to refund all cost-share payments and all cost shares paid under authorizations.

82 (2) Agreement not terminated. (i) By signing an agreement, the land user agrees to refund cost-share payments received under the agreement or to accept payment adjustment if the contracting officer, with the approval of the state conservationist, determines that:

82 (A) There was a violation of the agreement during the time the land user had control of the land; and

82 (B) The nature of the violation does not warrant termination of the agreement.

82 (ii) Payment adjustments may include decreasing the rate of a cost share or deleting from the agreement a cost-share commitment or withholding cost-share payments earned but not paid. The land user who signs the agreement may be obligated to refund cost-share payments and cost shares paid under authorizations.

82 @ 632.42 Violation procedures.

82 This section prescribes the regulations dealing with agreement violations. The Administrator reserves the right to revise or supplement any of the provisions of this section at any time if the action does not adversely affect the land user, or if the land user has been officially notified before this action is taken. No cost-share payment shall be made pending the decision on whether an agreement violation has occurred.

82 (a) Determination by contracting officer. Upon notification that an agreement violation may have occurred, the contracting officer:

82 (1) Determines, with the approval of the state conservationist, that a violation did not occur, or that the violation was of such a nature that no penalty of forfeiture, refund, or payment adjustment is necessary. No notice is issued to the land user, and no further action is to be taken; or

82 (2) Determines that a violation did occur, but the land user agrees to accept the penalty. If the land user agrees in writing to accept a penalty of forfeiture, refund, payment adjustment or termination, no further action is to be taken. The land user's agreement to accept the penalty must be approved by the contracting officer and state conservationist.

82 (b) Notice of possible violation. (1) When the state conservationist is notified that an agreement violation may have occurred that may warrant a penalty of forfeiture, refund, payment adjustment, or termination, he shall notify, in writing, each land user who signed the agreement of the alleged violation. This notice may be personally delivered or sent by certified or registered mail. A land user is considered to have received the notice at the time of personal receipt acknowledged in writing, at the time of the delivery of a certified or registered letter, or at the time of the return of an undelivered certified or registered letter.

82 (2) The notice setting forth the nature of the alleged violation shall give the land user an opportunity to appear at a hearing before a hearing officer designated by the state conservationist. The land user's request for a hearing shall be submitted in writing, and must be received in the SCS field office within 30 days after receipt of the notice. The land user shall be notified in writing by the hearing officer of the time, date, and place for the hearing. The land user shall have no right to a hearing if he does not file a written request for a hearing, or if he or his representative does not appear at the appointed time, unless the hearing officer, at his discretion, permits an appearance. A request for a hearing filed by a land user shall be considered to be a request by all land users who signed the agreement.

83 (c) Hearing. A public hearing is to be conducted to obtain the facts about the alleged violation. The hearing officer shall limit the hearing to relevant facts and evidence, and shall not be bound by the strict rules of evidence as required in courts of law. Witnesses may be sworn in at the discretion of the hearing officer.

83 (1) The land user or his representative shall be given full opportunity to present oral or documentary evidence about the alleged violation. Likewise, the United States may submit statements and evidence. Individuals not otherwise represented at the hearing may at the discretion of the hearing officer, be permitted to give information or evidence. The hearing officer, at his discretion, may permit witnesses to be cross-examined.

83 (2) The hearing officer shall make a record of the hearing so that the testimony can be summarized. A summary of the testimony may be made if both the land user and the state conservationist agree. A transcript of the hearing shall be made if requested by either the state conservationist or the land user within a reasonable time before the hearing. If a transcript is requested by the land user, the land user may be assessed the cost of a copy of the transcript.

83 (3) The hearing officer shall, after a reasonable period of time, close the hearing if the land user or his representative is not present at the scheduled time. The hearing officer may, at his discretion, accept information and evidence submitted by others present for the hearing.

83 (4) The hearing officer shall furnish the state conservationist with a written report setting forth his findings, conclusions, and recommendations. The report shall include the summary of testimony or transcript made of the hearing and any other information which would aid the state conservationist in reaching his decision.

83 (d) Decision by state conservationist. The state conservationist shall make a decision on the basis of the hearing officer's report, recommendations of conservation district board if any, and any other information available to him, including, if applicable, the amount of the forfeiture, refund, or payment adjustment. The decision shall state whether the violation is of such a nature as to warrant termination of the agreement. The state conservationist shall notify, in writing, each land user who signed the agreement of his decision. The state conservationist may authorize or require the reopening of any hearing before a hearing officer for any reason at any time before his decision.

83 (e) Appeal to Administrator. Any land user affected by a decision of the state conservationist shall have the right of appeal to the Administrator. The appeal and any briefs or statements must be received in the Office of the Administrator within 30 days after the land user has received notice of the state conservationist's decision. The state conservationist may file a brief or statement in the Office of the Administrator within 20 days after the land user's brief or statement is received there. The appeal shall be limited to the records and the issues made before the state conservationist. Such records shall be submitted to the Administrator by the state conservationist. The Administrator's decision shall be final. The decision will be based upon the record before him and the issues presented in the appeal, and the land user shall be notified in writing.

83 (1) If the decision provides for termination of the agreement, it shall state that the agreement is terminated and that all rights to further cost-share payments under the agreement are forfeited and that all cost-share payments received under the agreement shall be refunded. The decision is to state the amount of the refund and method of payment.

83 (2) If the decision does not provide for termination of the agreement, the land user may be required to make a refund of cost-share payments or to accept payment adjustments. The decision shall state the amount of refunds of

cost-share payments or payment adjustments. In determining amounts of refund or payment adjustments, the following are to be considered:

83 (i) The extent of the violation;

83 (ii) Whether the violation was deliberate or the result of negligence or was caused by circumstances beyond the control of the land user;

83 (iii) The effect on the program if no refund or payment adjustment is required;

83 (iv) The extent to which the land user benefited by the violation;

83 (v) The effect of the violation on the agreement as a whole; and

83 (vi) Other considerations including the appropriateness and reasonableness of the refund or payment adjustment.

83 Subpart F - Environment

83 @ 632.50 Environmental assessment.

83 (a) Environmental assessment is an integral part of the process used by SCS with each applicant to develop a conservation plan under this program. The process includes onsite inventory and analysis, evaluation of reasonable alternatives, and identification of significant environmental impacts. Major points in this process when SCS or the land user can make decisions concerning further action are:

83 (1) After an evaluation of the application for program assistance to verify eligibility, land user objectives, and priorities for funding;

83 (2) After a site-specific inventory and analysis to evaluate feasible treatment alternatives, costs, and environmental impacts;

83 (3) After development of an acceptable conservation plan as a basis for program agreement; and

83 (4) Before the signing of a mutually acceptable program agreement for financial cost-share assistance.

83 (b) The scope and complexity of the assessment will be consistent with the scope and complexity of the reclamation proposed.

83 (c) An interdisciplinary team consisting of SCS and/or other cooperating agency personnel as needed, is used in the assessment process.

83 (d) The Responsible Federal Official (RFO) will use the environmental assessment to make a decision concerning the need to prepare an environmental impact statement (EIS) in accordance with @ 632.52.

83 @ 632.51 Accord with environmental laws and orders.

83 (a) To comply with Section 102(2)(c) of the National Environmental Policy Act of 1969 (NEPA), a final program environmental impact statement (EIS) will be filed before the program becomes operational. This statement will disclose the cumulative program impacts that significantly affect the quality of the human environment.

83 (b) The program will be conducted in accordance with other laws and executive orders concerning environmental protection.

83 (c) Channelization of streams is prohibited under this program. A stream as used herein means a stream or segment thereof that has never been disrupted by activities of man or has been disrupted and has been restored.

83 @ 632.52 Identifying typical classes of action.

83 (a) The RFO will analyze the environmental assessment of the proposed action to determine which of the following classes of action applies. This determination will be recorded and will be available to the public on request.

83 (1) Actions not requiring a site-specific EIS. All proposed actions and their impacts that are determined to be adequately discussed in the program EIS or determined not to be major Federal actions will not require a site-specific EIS. However, if the assessment reveals that these proposed actions will have significant adverse affects on the quality of the human environment the RFO will:

83 (i) Modify the action to eliminate or mitigate the significant adverse impacts, or

83 (ii) Withdraw further Federal assistance if significant adverse impacts cannot be eliminated or mitigated.

84 (2) Actions requiring a site-specific EIS. Proposed actions and their impacts not adequately discussed in the program EIS that are determined to be major Federal actions significantly affecting the quality of the human environment in accordance with @ 650.7(b) of this chapter will require a site-specific EIS. When a decision is made to prepare an EIS, a Notice of Intent will be published in the FEDERAL REGISTER. The content and format of the EIS will be consistent with the format of the program EIS and use scoping and tiering techniques to focus on the significant environmental issues.

84 (3) Actions excluded from the EIS process. Those actions taken to prevent loss of life or property under the extreme danger provisions of priority one as described in @ 632.12. These actions are determined by a limited environmental assessment that reasonably identifies the possible loss of life or property.

84 [FR Doc. 78-9563 Filed 4-10-78; 8:45 a.m.]

86 SOIL CONSERVATION SERVICE U.S. DEPARTMENT OF AGRICULTURE

86 DRAFT ENVIRONMENTAL IMPACT STATEMENT

86 RURAL ABANDONED MINE PROGRAM (RAMP)

86 Abstract:

86 The Rural Abandoned Mine Program (RAMP) will help landowners develop and apply plans for the reclamation, conservation, and development of eligible lands affected by coal mining. Participation in the program is voluntary. It will be carried out in cooperation with conservation districts. It provides cost sharing to landowners through long-term agreements, funded through Congressional appropriations; from the Abandoned Mine Reclamation Fund. This statement explores alternative methods to administer RAMP and the possible results of the program. It demonstrates that the environmental effects of individual actions under the program will not significantly and adversely affect the human environment. There will be cumulative impacts over the life of the program. These impacts will be caused by the reduction of acid mine drainage, erosion, and sedimentation. Streams, ponds, and land will be improved for fish, wildlife, and human use. Areas subject to landslides and other hazardous conditions will be stabilized, reducing safety hazards to people and property. Returning the land to beneficial use will improve productivity, increase economic return, enlarge the tax base, improve wildlife habitat, and enhance visual quality. The use of funds under this program is an irreversible and irretrievable commitment of resources. No final program will be selected until comments on this draft EIS have been reviewed.

86 R. M. Davis, Administrator, SCS

86 April 7, 1978

86 Comments on this draft must be received by June 5, 1978. For further information, please contact Mr. James B. Newman, Chief, Conservation Programs Branch, Conservation Operations Division, Soil Conservation Service, USDA, P.O. Box 2890, Washington, D.C. 20013.

86 * * *

89 Introduction

89 The Soil Conservation Service (SCS) proposes to implement policies, procedures, and regulations for the Rural Abandoned Mine Program (RAMP) in accordance with Section 406, Title IV, Public Law 95-87; 91 Stat. 460: (30 U.S.C. 1236). The purpose of this environmental impact statement (EIS) is to evaluate the potential environmental consequences of implementing the program in different ways. No final program will be selected until comments on the alternatives have been reviewed.

89 A 1977 Soil Conservation Service inventory indicates that there are 1.1 million acres of abandoned coal mine lands in the United States. The conditions on most of this acreage adversely affect people and the quality of their environment. Therefore, the objectives of RAMP are: (1) to protect people and the environment from the adverse effects of unreclaimed or inadequately reclaimed coal mine lands; (2) to conserve and promote the development of the soil and water resources on these lands through reclamation.

89 The priorities for funding reclamation work are:

89 1. Protection of public health, safety, general welfare, and property from any extreme danger caused by past coal mining practices;

89 2. Protection of public health, safety, and general welfare from the diffuse adverse effects of past coal mining;

89 3. Restoration of the environment and land and water resources where they have been degraded by coal mining.

89 Environmental Consequences

89 The environmental consequences are discussed in a general manner because site-specific impacts cannot be determined until individual applications for RAMP assistance are received from land users.

89 The environmental consequences of the "no action" alternative are as follows:

89 1. The annual reclamation and development of up to 5,800 acres of abandoned coal mine land would not be accomplished;

89 2. Between 440,000 and 520,000 tons of soil erosion per year would not be eliminated and would continue to impair water quality and cause sedimentation of streams and lakes;

89 3. Numerous economic and environmental benefits would be foregone. These include more attractive landscapes, better wildlife habitat, increased agricultural production, and an improved tax base.

89 The range of environmental consequences that would occur from

implementing alternative versions of the program is as follows:

89 Full annual funding of RAMP (approximately \$4 0 million) would reclaim about 5,800 acres of abandoned coal mine lands yearly to a more beneficial land use, assuming that funds were allocated to all regions and for all eligible land uses;

90 If all RAMP funds were allocated to only one region, to the exclusion of the other regions, the \$4 0 million funding level would annually reclaim 5,200 acres, 7,200 acres, and 14,800 acres in the East, Midwest, and West, respectively;

90 Only reclaiming land for intensive agriculture would result in 5,000 acres per year being reclaimed. On the other hand, reclaiming land only for wildlife use would yield 5,000 acres per year, (assuming \$40 million level of funding);

90 Soil erosion would be reduced by approximately 440,000 to 520,000 tons per year by applying conservation treatment, depending on the version of the program selected;

90 Short-term increases in soil erosion by wind and water would occur during and following construction activities until vegetation becomes established;

90 Water surface area may be reduced on reclaimed lands;

90 Reduction of water runoff from small storms. The effect on storm water runoff decreases as the storm magnitude increases. The overall effect on flood-prone areas would be small;

90 Improved water quality from reduced acid mine drainage, less sedimentation, and decreased turbidity;

90 A temporary increase in stream turbidity during construction until vegetation is established;

90 Improved fish and wildlife habitat on approximately 5,800 acres per year assuming that funds were allocated to all regions and for all eligible land uses;

90 Temporary disruption of reclamation areas during construction, including increased traffic and air pollution from exhaust fumes and dust;

90 Long-term enhancement of the visual quality of the landscape;

90 Elimination of public safety hazards, i.e., trash dumps, insects, and rodent vectors;

90 Increased opportunities for certain types of recreation.

90 Operation of the program

90 RAMP will be administered by the SCS in cooperation with local conservation districts. Land user participation in RAMP is voluntary. Through long-term agreements of 5 to 10 years, the program provides cost-share assistance for installing appropriate conservation practices on abandoned coal mine lands. These agreements (contracts) are based on approved conservation plans prepared by land users with technical assistance from the SCS. The conservation plans will prescribe vegetative, mechanical, and management practices that will achieve the objectives of RAMP and the land user.

90 SCS will use environmental assessments in planning conservation practices with land users. These assessments will include an onsite and offsite inventory and analysis, evaluation of feasible alternatives, and identification of significant environmental impacts. The planning process is organized so that major decision points are reached where SCS and the land user decide whether to proceed with the proposed reclamation. The scope and complexity of the assessment will be consistent with the scope and complexity of the proposed reclamation.

91 If the reclamation site is 120 acres or less and the main benefits are onsite, the RAMP rate of cost sharing will be 80 percent. The cost-share rate could be increased by as much as 20 percent when the main benefits are offsite and the cost for land users would be a financial burden that would keep them from participating. It could be decreased by as much as 20 percent when there is a high potential for an increase in income as a result of reclamation. There would be a reduction of up to 0.5 percent per acre in the Government's share for reclaiming areas exceeding 120 acres. The maximum area that can be reclaimed with cost-share assistance is 320 acres per landowner.

91 Program alternatives

91 The SCS identified the following factors that will affect how RAMP is implemented:

- 91 1. The level of program funding;
- 91 2. The allocation of program funds by geographical area;
- 91 3. Land uses after reclamation;
- 91 4. Funding priorities;
- 91 5. Cost-sharing rates;

91 6. The minimum length of agreements;

91 7. Eligible land users.

91 Factors 1, 2, and 3 will determine the alternatives for implementing the program. Factors 4, 5, 6, and 7 were eliminated as significant because they could be changed little under the law or, if they were varied to any extent, they would not meet the objectives of the program. Therefore, they must be included in all RAMP alternatives under consideration.

91 The amount of money transferred to the Secretary of Agriculture from the Abandoned Mine Reclamation Fund will directly determine the amount of abandoned coal mine land that could be reclaimed. A range of \$0 to \$4 0 million was considered in analyzing program alternatives.

91 Implementing RAMP on a regional basis was also analyzed. The 29 States that have abandoned coal mine lands may be subdivided geographically into the regions of the East, Midwest, and West. Each region has different environmental characteristics that influence reclamation treatments, costs, and their environmental consequences. Land users may reclaim abandoned mine lands for cropland, pastureland, hayland, rangeland, forest, wildlife land, recreation, or other associated uses.

91 Gross value of agricultural output would increase by an estimated \$11 per acre in the West, \$65 per acre in the Midwest, \$2 2 per acre in the East, and \$3 1 per acre for a regional mix. For a regional mix of reclamation for intensive agriculture only, i.e., cropland and pastureland, the output would increase by \$66 per acre;

91 Depending on the income-producing potential of the reclaimed land, the tax base would increase substantially;

92 Income and employment would be generated by construction expenditures during the reclamation process and by increased agricultural production after reclamation. Greater production income and employment would increase final demand. This increase in demand would be a further economic stimulus.

92 Conclusion

92 The cumulative environmental consequences of implementing the program are significant. The environmental benefits are significant while adverse impacts are not significant. The SCS concludes from this EIS that the environmental impacts

of the majority of individual site-specific, agreements entered into under this program are adequately disclosed with few exceptions. An environmental assessment conducted during the conservation planning process of each RAMP agreement will identify potential environmental impacts.

93 Purpose and Needs

93 A 1977 Soil Conservation Service inventory determined that there are 1.1 million acres of abandoned coal mine lands that are unreclaimed or inadequately reclaimed in 377 counties within 29 States. Much of this acreage adversely affects people and the environment by endangering public safety and health, decreasing the utility of land, impairing visual quality, and reducing fish and wildlife habitat.

93 The Soil Conservation Service (SCS) proposes to implement policies, procedures, and regulations to carry out the Rural Abandoned Mine Program (RAMP) in accordance with Section 406, Title IV, Public Law 95-87; 91 Stat. 460: (30 U.S.C. 1236). The objectives of the program are to protect people and the environment from the adverse effects of past coal mining practices and to promote the development of the soil and water resources of unreclaimed lands. Mined lands are to be stabilized by:

93 Controlling erosion and sediment on mined areas and areas affected by mining;

93 Reclaiming lands and water for useful purposes; and

93 Enhancing water quality or quantity where disturbed by mining practices.

93 Priorities for funding reclamation work are:

93 1. Protection of public health, safety, general welfare, and property from any extreme danger caused by past coal mining practices;

93 2. Protection of public health, safety, and general welfare from the diffuse adverse effects of past coal mining;

93 3. Restoration of the environment and land and water resources where they have been degraded by coal mining practices. (Local priorities would be established to deal with the more serious environmental effects first.)

93 Alternatives for the RAM Program

93 How the program is to be conducted is restricted by Title IV of Public Law 95-87. However, these seven program factors were identified as possible variables that might affect how RAMP is implemented:

93 1. Level of funding of the program;

93 2. The allocation of funds by geographical area;

93 3. Land uses after reclamation;

93 4. Funding priorities; variation in funding levels is limited because of the priorities established by the law.

93 5. Cost-sharing rates; these rates would be maximized to foster program participation.

93 6. Minimum length of agreement;

93 7. Eligible land users; little variation is permitted under the law.

94 Factors 4-7 were eliminated as significant because they could be changed little under the law or, if they were varied to any extent, they would not meet the objectives of the program. Therefore, they must be included in all alternative programs.

94 Factors 1, 2, and 3 form the range of alternatives for implementing the program. They are described in more detail in this section as "Alternatives in the Program." There is no final program in this draft statement.

94 What all program alternatives have in common

94 Reclamation will be a voluntary basis in cooperation with conservation districts and/or local reclamation committees. RAMP provides cost sharing to land users through 5-to 10-year agreements based on approved conservation plans.

The following points are common to all program alternatives and fulfill the program's objectives.

94 Funding and eligibility

94 RAMP is funded through appropriations by Congress from the Abandoned Mine Reclamation Fund. The funds come from reclamation fees collected under the provisions of Section 402(a) of Public Law 95-87. The Secretary of the Interior may transfer up to 20 percent of these funds to the Secretary of Agriculture.

94 Total available funds for the program could, upon appropriation, exceed \$40 million per year.

94 Abandoned or inadequately reclaimed coal mine lands that existed before August 3, 1977, are eligible for RAMP. These are lands that were either disturbed or affected by past coal mining. Lands that are under Federal ownership and operation or have a continuing reclamation responsibility under State or Federal law are not eligible for the program. Abandoned lands that are

under contract to be remined for coal are not eligible. However, if it is not economically feasible to extract the coal and the remining would be part of a reclamation technique, the land would become eligible.

94 Eligible land users are landowners, owners of water rights, residents, tenants, or their agents operating as individuals, partnerships, associations, corporations, estates, trusts, or nonfederal public entities who control eligible lands and waters. The term "land user" is used in the preceding sense throughout this EIS.

94 The eligible lands or waters will be reclaimed for beneficial use. The use of the reclaimed land is based upon the needs and objectives of the land user, however, it must be compatible with surrounding land uses. Restoration to the designated land use must be technically feasible. The maximum acreage of land and water that may be reclaimed by a land user under this program is 320 acres. However, the maximum acreage will be determined on the basis of ownership rather than tenancy.

94 Assistance is obtained through conservation plans

94 A conservation and development plan will be prepared by the land user in cooperation with the conservation district. It will contain a written record of the decisions concerning proposed land use and the conservation treatment required to meet the reclamation objective. Consideration will be given to the resource capability of the land, technical feasibility of reclaiming the land, and adjacent land use.

95 The conservation plan will identify all conservation practices needed to realize the reclamation objective and to protect the soil and water resources after reclamation. It could consist of a single practice, but most frequently will require a combination of practices forming a resource management system for the affected land. All essential practices will be included. Other practices that enhance the quality of the environment over and above the essential conservation treatment may be included. An example would be improving wildlife habitat by providing additional cover such as grass field borders or shrub plantings where cropland is the planned land use. All conservation treatment must meet the standards and specifications in the local SCS Technical Guide. These standards and specifications meet applicable Federal and State laws. 5
Composition of conservation plans

95 The approved conservation plan should include the vegetative, mechanical,

and management practices needed to reclaim, conserve, or develop soil and water resources.

95 Vegetative practices are most important in providing a protective covering on reclaimed areas. They assist in erosion control and the production of a useful crop. The vegetative species and the establishment techniques used should fit the local climate, soil, and topographic conditions as well as the land user's objectives. Critical area plantings may supplement a woodland planting if the risk of soil erosion during the tree canopy development period is high. Pasture and hayland plantings would be established primarily for livestock forage, but would also play an important role in controlling soil erosion. Consequently, the mixture of species should reflect this dual objective.

95 Mechanical practices are used mainly to support and protect the vegetative treatments and are usually essential for controlling runoff and erosion. They should control and dispose of surface and subsurface water by collecting and diverting water from the reclaimed area or conveying it through the area to a point of safe discharge without causing excessive erosion or pollution. Practices used for diverting water are diversions, terraces, dikes, land shaping and grading, subsurface tile or tubing, and surface ditches. Practices that convey water through an area are chutes, flumes, waterways, grade stabilization structures, pipes, and culverts. The main principle in designing water disposal practices is to maintain nonerosive velocities. In some cases a covering or lining such as rock riprap or concrete is needed to protect the soil from erosion.

95 Sediment control practices are designed to detain water long enough for soil particles to settle out. They may be temporary or permanent. Temporary practices use materials such as sandbags or dumped rock placed across a drainageway to trap the sediment. More permanent measures include sediment basins or ponds to catch and retain sediment-laden runoff from the reclaimed area.

95 Water disposals and catchments need to be considered in planning a system to control erosion and sediment. These measures would be modified to function properly in areas that have different topographies, climates, and types of mining.

95 Conservation practices are also used to stabilize reclaimed areas and improve fish and wildlife habitat. They may include: planting trees, shrubs, grasses, and legumes; water control, conveyance, or impoundments; and the management of these practices for wildlife food and cover.

95 Provisions of agreement

95 A land user who has an approved conservation plan would enter into a agreement (contract) with SCS to receive Federal cost-share assistance through RAMP. The agreement will cover a period of at least 5 years but will not exceed 10 years. When signed by the land user and the SCS contracting officer, it obligates the land user to apply the land use and conservation treatment as scheduled in the plan in accordance with SCS standards and specifications.

96 If during the period that the agreement is in effect, the land user sells or transfers his interest in the property, the agreement is terminated. In that case, the land user shall refund all cost-share payments received unless the new landowner assumes the agreement at the time of the sale.

96 An annual review of the agreement is made by the SCS and the land user to ensure that the land user is in compliance.

96 Operation and maintenance

96 The agreement includes a schedule for installing conservation practices and provisions for operating and maintaining the applied conservation treatment. During the agreement period, the land user would be responsible for the operation and maintenance of the treatment installed.

96 The agreement may be modified to provide cost sharing to repair or reapply conservation treatment that did not achieve the desired results or failed through no fault of the land user. During the agreement period, annual reviews will be made of the applied treatment. This review will be used to note the condition of applied conservation treatment and to assess maintenance.

96 Basis of cost sharing

96 The agreement provides the basis for RAMP cost sharing. The land user could install the planned conservation treatment, arrange to have the practices installed by SCS under a Federal contract, or hire a local contractor. In all cases, the practices installed must meet SCS standards and specifications to be eligible for cost-share payment.

96 Cost-share rates would be based on the following criteria:

- 96 1. Whether the benefits are offsite or onsite;
- 96 2. The financial burden when the main benefits are offsite; and
- 96 3. The proportionate reduction of cost-share rates between 120 acres and 320 acres as required by Section 406 of the law.

96 The application of conservation treatment is considered a financial burden when the land user's costs cannot be recovered within the agreement period and would probably prevent participation in the program. Offsite benefits are effects that would occur mainly outside the boundary of an eligible area as a result of implementing a conservation plan. Examples of offsite benefits are the reduction of erosion or sediment damage, elimination of a public safety or health hazard, improvement of water quality, or improved visual quality.

96 When the reclamation site is 120 acres or less and the main benefits are onsite, the Federal rate of cost sharing would be 80 percent. The Federal share could be increased by as much as 20 percent when the main benefits are offsite and there is a financial burden. It could be decreased by as much as 20 percent when there is a high potential for an increase in income as a result of reclamation. There would be a reduction of 0.1 percent per acre for reclaiming areas exceeding 120 acres up to a maximum of 320 acres. When more than 120 acres are reclaimed, a weighted average cost-share rate is calculated.

97 Bureau of Mines Information Circulars IC-8737 (1977) and IC-8695 (1975) show that reclamation costs vary greatly from one site to another. In general, however, reclamation costs are higher in the East, slightly less in the Midwest, and significantly lower in the West. The weighted-average cost for reclamation to all eligible uses by region is: \$7,600 per acre in the East, \$5,600 per acre in the Midwest, and \$2,700 per acre in the West (see figure 1.)

97 The average reclamation cost expected for a regional mix is \$6,900 per acre, assuming that all land uses are eligible. This is based on a weighted average of the amount of abandoned lands disturbed by coal mining in each region and reflects the large acreage of disturbed lands in the East.

97 The national average of the cost to reclaim land to cropland and pastureland is \$8,000 per acre. This is based on statistics found in Surface Mining and Our Environment: A Special Report to the Nation (U.S. Department of Interior, 1967).

97 Operation of the program

97 An environmental assessment is an integral part of the conservation planning process. Its scope and complexity will be consistent with the scope and complexity of the proposed reclamation. An interdisciplinary team consisting of SCS and/or other cooperating agency personnel will make the

assessment. It begins with the review of the application by the SCS official and continues through the development of the plan. An onsite inventory, analyses and evaluation of feasible alternatives, and identification of significant environmental impacts are included.

97 Four major points where SCS or the land user makes decisions concerning further reclamation action are:

97 1. After an application has been evaluated to verify the eligibility of a land user's objectives and to determine priorities for funding.

97 2. After a specific inventory and analysis, the evaluation of feasible treatment alternatives, and the determination of costs and impacts.

97 3. After development of an acceptable conservation plan as a basis for an agreement.

97 4. Before signing an agreement for cost-share assistance.

97 The program will be conducted in compliance with Executive orders and Federal, State, and local environmental laws and regulations. These include, but are not limited to: Endangered Species Act of 1973; Clean Air Act Amendments of 1970; National Environmental Policy Act of 1969; Clean Water Act of 1972; Executive Order 11514, Protection and Enhancement of Environmental Quality, 1970; Executive Order 11953, Protection and Enhancement of the Cultural Environment, 1971; Executive Order 11990, Protection of Wetlands, 1977; and Executive Order 11988, Protection of Flood Plains, 1977.

97 Channelization of streams is prohibited under this program. A stream as used herein means a stream or segment thereof that has never been disrupted by the activity of man, or has been disrupted and has been restored.

97 A proposed action will not require a site-specific EIS if it has been determined that it is not a major Federal action or its effects are adequately discussed in this program EIS.

97 However, if the environmental assessment for an action indicates that it will have a significant adverse effect on environmental quality, the RFO will:

98 [SEE ILLUSTRATION IN ORIGINAL]

99 1. Modify the action to eliminate or mitigate the significant adverse impacts, or

99 2. Withdraw Federal assistance if these impacts cannot be eliminated or mitigated.

99 If it has been determined that a proposed action is a major Federal action that will significantly affect environmental quality, a site-specific EIS must be prepared. When a decision is made to prepare an EIS, a notice of intent will be published in the Federal Register.

99 No EIS will be required for any action taken to prevent loss of life or property under the extreme danger provision covered by funding priority number one. These actions will be taken based on a limited environmental assessment that reasonably identifies the possible loss of life or property.

99 Variable factors considered in determining the alternatives for the program include:

- 99 1. The level of program funding;
- 99 2. The allocation of program funds by geographic area; and
- 99 3. Land uses after reclamation.

99 They are reflected in the proposed program rules and regulations. An analysis of them follows.

99 Level of funding

99 The amount of money transferred to the SCS from the Abandoned Mine Reclamation Fund will directly determine the amount of abandoned coal mine land that could be reclaimed. Section 401 of Public Law 95-87 authorizes the Secretary of the Interior to transfer up to one-fifth of the money deposited in the Abandoned Mine Reclamation Fund to the Secretary of Agriculture for carrying out RAMP. A range of \$0 to \$4 0 million was considered in assessing the potential program alternatives. Availability of SCS personnel, private consultants, and contractors to implement and service the program may also be a limiting factor.

99 Allocation of program funds by geographical area

99 Where RAMP is implemented is another variable factor. The 29 States that have abandoned coal mine lands are in the East, Midwest, and West. Each of these regions has different environmental characteristics that influence reclamation treatments and costs and their environmental consequences. One region could be selected for reclamation actions in order to maximize either public environmental benefits or reclaim the greatest number of acres at the least cost.

99 Post reclamation land uses

99 Under Public Law 95-87, eligible land users may reclaim abandoned mine

lands for cropland, grassland, rangeland, woodland, wildlife land, recreation, or other associated uses.

99 Depending on the land use selected, there would be a different beneficial effect. Emphasizing the development of agricultural lands would maximize economic benefits. Emphasizing reclamation for wildlife lands would maximize environmental benefits.

100 Combining different levels of funding, geographic areas of application, and land uses after reclamation shows the range of potential program alternatives. Each alternative would have its own environmental impacts.

100 Examples of program alternatives

100 The following three examples illustrate the breadth of the potential alternatives:

100 (a) Alternative 1 - no project funding. This alternative would provide no funds for RAMP. Funds collected under the Abandoned Mine Reclamation Fund (Section 401, Title IV) would be applied only to the State or Indian Land Reclamation Program (Section 405) or a program of Federal acquisition and reclamation of land adversely affected by past coal mining (Section 407) administered by the USDI Office of Surface Mining.

100 (b) Alternative 2 - This alternative would provide \$4 0 million each year for assistance to land users in only 19 of the 29 States where eligible abandoned coal mine lands occur. These States contain 169 counties that each have more than 1,000 acres of abandoned coal mine lands and altogether they contain one million acres. These States include: Alaska, Maryland, Texas, Arkansas, Colorado, Wyoming, Iowa, Virginia, Tennessee, Oklahoma, Kansas, Missouri, Alabama, West Virginia, Kentucky, Illinois, Ohio, Indiana, and Pennsylvania. These States include eight eastern States, six midwestern States, and five western States. The only land use allowed by this alternative after reclamation is for wildlife and associated recreation. This alternative would maximize environmental benefits by reclaiming the abandoned mine land in areas of greatest need. The emphasis on use of land for wildlife after reclamation will provide further environmental gains.

100 (c) Alternative 3 - This alternative will provide \$4 0 million each year for the reclamation and development of abandoned coal mine lands that occur in the West and Midwest. Land use after reclamation would emphasize economic returns by maximizing the return of the land to agricultural use. The application of the program to the western and midwestern areas would treat a larger amount of land because reclamation costs are generally less in those areas.

101 Description of the Affected Environment Areas affected

101 The United States has 1.1 million acres of abandoned coal mine land needing reclamation (USDA, 1977). It is located in 29 States, with 97 percent concentrated in 14 States. These States are:

	East	Acres
Pennsylvania		240,000
Ohio		196,700
Kentucky		101,600
West Virginia		84,900
Alabama		72,300
Tennessee		29,600
Virginia		23,700
Maryland		2,804
Georgia		1,680
Total		753,297
Midwest		Acres
Illinois		118,700
Missouri		70,700
Kansas		41,300
Oklahoma		36,100
Indiana		25,900
Iowa		14,000
Arkansas		5,623
Texas		3,300
Michigan		142
Total		315,727
West		Acres
Wyoming		9,657
Colorado		7,089
Alaska		2,700
Montana		1,955
North Dakota		1,955
South Dakota		890
Utah		635
Arizona		400
Washington		42
New Mexico		22
California		10
Total		24,450

101 Figure 2 shows the location of the abandoned mine land by county.

101 An estimate of how this land is now used is shown in table 1 in the Environmental Consequence Section. (Figure 3 shows the geographic distribution of all abandoned mine land.)

101 Climate, topography, and land use The major areas of abandoned mine lands are described below.

101 East

101 The eastern coal mining region can be divided into the Bituminous Coal

Basin and the Pennsylvania Anthracite Fields. Most of the Bituminous Coal Basin lies in the Appalachian Plateau physiographic province. This coalfield extends continuously in a northeast to southwest direction along the Appalachians. The Appalachian Plateau has a rolling to hilly topography dissected by streams. The Pennsylvania Anthracite Fields run in a southwest direction from the northeastern corner of Pennsylvania to a point near Harrisburg.

102 [SEE ILLUSTRATION IN ORIGINAL]

103 [SEE ILLUSTRATION IN ORIGINAL]

104 Climatically, the eastern region favors plant establishment and growth. For most of the area, the frost-free season ranges from 150 to 220 days. Annual precipitation ranges from less than 30 to more than 60 inches, and more than half falls in the warm season. Warm season evaporation is less than precipitation. The abundant precipitation, high humidities, and moderate cloudiness favor revegetation of disturbed areas.

104 The eastern region's coal-bearing counties contain about 50,000,000 acres. These lands are about 64 percent forest, 14 percent cropland, and 9 percent pastureland.

104 Midwest

104 The midwest coalfields occur in two areas. The East Central Coalfield extends throughout north-central and southern Illinois, the southwestern corner of Indiana, and portions of western Kentucky. It is a slightly undulating plain, developed in thick deposits of glacial till, that has an average elevation of 550 feet (m.s.l.). The soils are formed primarily from glacial till plains mantled by loess. The soils that dominate the northern two-thirds of the coalfields are some of the most agriculturally productive in the world.

104 Forests are the dominant climax vegetation in this area. Tall grass prairie is climax in small areas. Slightly more than 89 percent of the area is utilized for crops, pasture, and forests.

104 The West Central Coalfields are the other area in the Midwest. The coalfields of central and southern Iowa are a gently rolling upland developed in recent glacial deposits. The coalfields of eastern Kansas and Oklahoma are unglaciated and have ridges formed by resistant sandstone layers in the coal-bearing strata. Lying at the northern end of the coalfields are the soils of central Iowa and north-central Missouri. They are deep, highly productive, dark-colored prairie soils formed from loess overlying glacial till. West of

these areas and extending south along the Missouri River into northeastern Kansas and northwestern Missouri is a hilly belt of rolling or dissected plains.

Soils of this belt were formed from deep loess overlying glacial till.

104 Soils of the coalfields in southwestern Missouri and southeastern Kansas are gently sloping to rolling plains that are underlain by and weathered from sandstone, shale, and limestone.

104 Annual precipitation in this region ranges from 35 to 40 inches and is well distributed throughout the year. For most of the area the frost-free season is about 200 days.

104 The western portion of this region lies between the short grass plains of the West and the oak-hickory deciduous forests of the East. A major portion is in the transition zone between hardwood forest and prairie biomes.

104 Nearly 93 percent of this area is used for crops, pasture, range, and forests. The northern portion is used more extensively for cropland, while the southern portion is used for pasture and range.

104 West

104 The major coalfields of the West are predominantly in three areas: the Rocky Mountain division, the northern part of the Great Plains province, and the Intermontane Plateau division.

105 The Rocky Mountain division has a rugged topography of deeply dissected mountain uplands separated by coal-bearing intermontane basins. The coalfields are distributed discontinuously throughout the intermontane basin of southcentral Montana, southeastern Utah, western Wyoming, central Colorado, and north-central New Mexico. Geologic, ecologic, and climatic conditions vary greatly within this area, yet extensive parts are similar. Annual precipitation is low, ranging from 4 inches in some of the area to more than 40 inches in the higher mountains. Average rainfall figures may be misleading because more than half of the rainfall occurs during the 3 summer months. Droughts are common all over and annual precipitation in the coal mining regions is more often below the average than above it. Extreme fluctuations in annual and seasonal temperatures are to be expected. Of the land in this division 31 percent is range, 11 percent forest, and 6 percent cropland.

105 In the northern Great Plains, coalfields underlie discontinuous portions of western North Dakota, southwestern South Dakota, northeastern Wyoming, and the eastern two-thirds of Montana. Elevation of the plains generally ranges from 2,000 to 3,600 feet, but it rises to over 5,000 feet east of the northern Rocky Mountain front in central Montana.

105 Grassland prairie is found in Wyoming, Montana, and western North Dakota below the elevation of the ponderosa pine zone. The most striking feature is the phenomenal flatness of the interstream areas that form a plain or alluvial slope. Temperatures vary considerably with fewer than 100 frost-free days. Average annual precipitation ranges from 10 to 18 inches, with 60 to 80 percent coming during the spring and summer portions of the growing season. The native vegetation is a mixture of midgrass and short grasses.

105 There are more than 81 million acres in the coal-bearing counties of the northern Great Plains. Some 54 percent of the land is used for range, 27 percent is cropland, and only 3 percent is forest land.

105 The Colorado Plateaus contain the most significant coal lands in the Intermontane Plateau. They extend throughout western Colorado, the eastern half of Utah, northwestern New Mexico, and northern Arizona. Much of the land is flat with angular steep-faced escarpments. Elevations within the region generally range from 5,000 to 8,000 feet.

105 Approximately 50 percent of this area is made up of range and forest and approximately 20 percent is in cropland and improved pasture.

105 Mining methods

105 Three principal mining methods have been used on land needing reclamation (USDI, 1967).

105 Contour mining is practiced mostly where deposits occur in rolling or mountainous country. Basically, it consists of removing overburden above the bed by starting at the outcrop and proceeding along the hillside. After the deposit is exposed and removed by the first cut, additional cuts are made until the ratio of overburden to product brings the operation to a halt. This method of mining creates a shelf or bench on the hillside. The inside is bordered by a high wall that may range in height from a few feet to more than 100 feet. The opposite or outer side is a rim. Below it there is frequently a steep slope that has been covered by spoil material cast from the hillside. Where the original slope is too steep, the overburden may be used to backfill the cutout

area. Contour mining is practiced widely in the coalfields of Appalachia (see figure 4).

106 Area strip mining usually is practiced on relatively flat terrain. A trench or "boxcut" is made through the overburden to expose a portion of the deposit that is then removed. As each succeeding parallel cut is made, the spoil (overburden) is deposited in the cut just previously excavated. The final cut leaves an open trench as deep as the thickness of the overburden plus the coal removed, bounded on one side by the last spoil bank and on the other side by an undisturbed high wall. Area stripping, unless graded or leveled, resembles the ridges of a gigantic washboard (see figure 5).

106 Deep mining limits surface disturbance by extracting coal and associated waste material through a shaft. The waste material is usually separated on the surface and deposited in gob or slurry.

106 Conditions after mining

106 During surface mining operations, the strata of materials over the coal seam are removed and then deposited, in most cases, as a heterogeneous, disorganized mass referred to as spoil. The resulting spoil contrasts sharply with the physical and chemical nature of normal soils that have evolved by more orderly processes. Spoil from abandoned mines has characteristics that present major problems. Some of these problems that are related to reclamation programs are described in the section on toxic spoils.

106 Erosion and sedimentation

106 Erosion and sedimentation produce some of the worst environmental effects of unreclaimed mine land (see figure 6).

106 Erosion and the resulting sedimentation contribute to the exposure of toxic spoil, onsite and offsite water pollution, and an unattractive landscape.

Erosion rates depend on the type of mining, topography, rainfall, the type and amounts of vegetation that volunteer onto the abandoned mine land, and the age of the spoil. The rate of erosion is much more rapid on freshly placed spoil.

Land abandoned for a long time may erode less rapidly because small and large stones accumulate on the surface that has been exposed by erosion and may produce a shingling effect. In addition, spoil becomes more compacted as time passes and is less subject to erosion.

106 A 1967 estimate indicated that approximately 40 percent of all surface-mined land had eroded enough to form rills and some gullies. On 400,000 acres, gullies more than one foot deep have been formed. These gullies are frequently associated with long slopes (USDA, 1967).

106 Estimates of erosion from unreclaimed mine land vary from a few tons per acre to rates in excess of 300 tons per acre. Erosion resulting from area stripping is comparable to that associated with contour mining. In both types of mining a large percentage of the sediment is retained in depressions on the sites (Haynes and Klimstra, 1975).

106 A study conducted in eastern Kentucky (Plass, 1966) indicated that a partially stripped watershed had an average erosion rate of 5.9 tons per acre per year. In comparison, the unmined watershed had an average erosion rate of 0.7 tons per acre per year. Ninety-seven percent of the erosion in the partially stripped watershed was attributed to the strip-mined area, even though it amounted to only 6.4 percent of the total watershed area.

107 [See Illustration in Original]

108 [See Illustration in Original]

109 Toxic spoil

109 The composition of the surface layer of strip mined land (spoil), has been described by Chapman (1944) and Limstrom (1953). The spoil from stripped land may vary from the usual clays and silts with small particles to massive limestones and sandstones weighing several hundred pounds. Pyritic materials such as iron pyrite (FeS_2) occur as crystals throughout much of the shale and sandstone or as fairly large concentrations immediately above or within the coal seam. Upon exposure to air and moisture, these materials oxidize and release chemicals that lower the pH and may create toxic conditions (Peterson and Nielson, 1973). The chemicals released consist almost entirely of mixed sulphate salts, originating as iron sulphate and sulphuric acid produced by the oxidation of the pyritic materials. Additional reactions, triggered by the presence of sulphuric acid on adjacent fragmented rock, release into solution metallic elements such as calcium, magnesium, aluminum, manganese, sodium, and potassium. In some cases, they are released in toxic concentrations. Calcareous rocks and spoil material may yield natural sulphates of calcium and magnesium, while acidic rocks and spoils yield high sulphates of aluminum, iron, magnesium, and other irons (Struthers, 1962). Soluble aluminum is considered the most common toxic element in acid spoils (Coleman et al., 1958). Soluble aluminum increases in spoils as the acidity increases. This occurs because clay

minerals are unstable in the presence of hydrogen ions (i.e., low pH). The hydrogen ions cause a breakdown of the clay and the release of aluminum in solution (Miller, 1965).

109 The pH of soil reaction influences the life function of organisms, availability of plant nutrients, and physical properties of soil. An additional effect of low soil pH is the fixation of some insoluble nutrients. An Ohio study (Riley, 1963) indicated deficiencies in 57 percent of the tests for nitrate nitrogen, in 76 percent of the tests for ammonia nitrogen, in 80 percent of the tests for phosphorus, and in 72 percent of the tests for potash.

109 Water pollution

109 Surface water quality is damaged when silt, sediment, and chemical pollutants move from the mined areas into surface water. While damages such as denuded land, loss of wildlife habitat, and destruction of soil are usually associated with the immediate mining area, the effects of water pollution may be apparent many miles from the mining operation. Extensive reaches of streams may be left unsuitable for domestic and industrial water supplies and for agricultural uses such as irrigation. Fish and other aquatic life may be destroyed, and polluted water draining from surface mines may cross adjacent lands, destroying crops and trees and ruining wells and lakes.

109 The greatest water pollution problem is in the East. Data indicate that approximately 6,000 miles of stream and 68 reservoirs have been adversely affected by surface mining (Spaulding and Ogden, 1968). Pennsylvania and West Virginia contained more than two-thirds of the 6,000 miles of mine-affected streams.

109 Acid and minerals such as aluminum and calcium are often found in high concentrations in mine water. During hydrolysis, iron hydroxide, or "yellow boy," is formed. It is an additional contaminator that coats stream bottoms. In the study by Spaulding and Ogden, a random sampling indicated that 31 percent of the sites with streams had chemical precipitants on the stream bottoms and 37 percent of the streams had discolored water. Silt and sediment pollution is common from all surface mining. As water flows over loose soil or rocks, it picks up and carries small particles. These settle out in watercourses causing additional problems.

110 Spaulding and Ogden (1968) found that 15,000 acres of water impoundments in 20 States could provide suitable fish and wildlife habitat if acid pollution were sufficiently reduced. About 97 percent of the acid pollution in streams and 63 percent in impoundments resulted from coal mining operations.

110 The U.S. Public Health Service estimated in 1962 that 3,200,000 tons of acid were discharged annually into streams from active and abandoned underground

and surface mines in Appalachia. Much of the acid is neutralized soon after it enters the stream system. A residual acid load in excess of 300,000 tons a year is not neutralized until it reaches the larger streams of the region.

110 USDA studies (1967) indicate that sediment is a problem primarily associated with inadequate plant cover. They also showed that of 14,000 miles of stream channel affected by surface mining, 7,000 miles of channel had their water-carrying capacity significantly reduced. The capacity was moderately reduced along 4,500 miles. However, excess sediment from mine activity was not found in small streams that were more than 2 miles from the mined area. On 98 percent of the surface-mined land in Appalachia, where contour strip mining is common, storm water control is inadequate to prevent erosion, sediment, or flooding.

110 Esthetics

110 Generally, the appearance of abandoned mine land is esthetically unpleasant. The esthetic degradation of land is not limited to the mined area. Frequently, the offsite damage caused by mining degrades the appearance of an entire area (see figure 7). An example is the "yellow boy" that discolors the bottom of streams.

110 Ground water

110 Pollution of subsurface or ground water by surface mining in the Appalachian coalfields is an enormous problem (Spaulding and Ogden, 1968). More than 75 percent of the water discharging from deep mines in the area comes from surface mining. The water is collected from surface mines and, in many cases, percolates through fractures into deep mines. Once in a deep mine, it runs along the drifts of discarded spoil materials and picks up chemicals and acid.

110 Other instances where water quality and quantity have been severely affected are in pit-type operations where the surface water collects and enters the ground water. Silt and sediment are filtered out, but mineral and radiological pollution may enter.

110 Special problems

110 Abandoned mine land has many unique or special problems. These include the waste-processing areas associated with deep mining, tipples sites, mine roads, and slides from surface mining. The U.S. Forest Service examined erosion

on mine access roads and found that the soil loss rate for a sandy silt road was 2.6 inches per year (Weigle, 1965). Frequently, these problems occur in relatively small areas. However, because of their physical characteristics, they are major reclamation concerns.

110 The instability of spoil in the mountainous area of the East is another special problem. A study of 17 slides in Kentucky (Weigle, 1965) showed that water seepage into slopes affected their stability in two ways. First, water entering the space between soil particles displaces the water that is already present, thereby lowering the surface tension of the soil. Second, water entering the ground always raises the water table and thereby increases the pore water pressure. This, in turn, lowers the shearing resistance of the soil. Studies by the USDA (1962) indicate that massive slides are a problem on about 3,600 miles of slopes left by contour mining, especially where the subsoil is unstable. Slides often enter streams and even block channels. Slides of this size occur on about 10 percent of the total mileage of outer slopes.

111 [See Illustration in Original]

112 Surface temperature is another special problem on abandoned mine land that is not immediately vegetated. Temperature measurements of surface mine spoil indicate that heat injury to plants and seedlings commonly occurs on bituminous material. The threat of injury by high temperatures is especially serious on black bituminous coal and black organic shales (Deely and Borden, 1969).

112 The need for revegetation

112 A large percentage of abandoned mine land lacks vegetation. This is caused by toxic spoil, the lack of available seed sources, the irregular angles or exposure of the spoil, low fertility, and drought conditions.

112 The climates of the East and Midwest favor the rapid natural invasion of vegetation onto disturbed sites. Spoil that permits indigenous species to volunteer is most frequently invaded by trees. Until they are 8 to 10 years old, they provide poor erosion control particularly in the steep terrain of the Appalachian Mountains (Ruffner, 1978). The low rainfall in the West slows the rate of invasion of plants onto the spoil and the absence of vegetation allows extensive soil erosion by the wind.

112 Vegetative types

112 Abandoned mine land may be partially revegetated. The type of revegetation that occurs will be influenced by the adjacent vegetation, the characteristics of the spoil, and climatic conditions. Several years after

being abandoned, the mine land may develop one of several vegetative types.

112 Forest

112 Forest land is common in the East and Midwest where the climax vegetation is hardwood forest. Abandoned areas that volunteer to tree species do so because adjacent wooded areas are the only available seed source. Species that occur most frequently are short-lived volunteer trees that do little to control erosion and have limited commercial value.

112 Range type

112 In parts of the Midwest and the West where the climax vegetation is predominantly short and tall grasses, abandoned mine land that can support vegetation becomes partially revegetated with native species. Annuals and short-lived perennials will usually invade first. As the spoil weathers, they are replaced by longer-living plants. The quality of vegetative cover is usually inferior to that on adjacent unmined areas.

112 Mixed types

112 In many areas of the East and Midwest, there will be other seed sources adjacent to the abandoned mine land besides trees. In such situations, there may be an initial invasion of annual grasses and forbs, followed by perennial grasses, brambles, and weeds. If the spoil can support successional cover, woody plants will invade. In many instances, the quality of this type of cover is adequate for erosion control.

113 Unvegetated areas

113 Because of low pH, other toxic conditions, or excessive stoniness, some areas may remain completely unvegetated for many years.

113 The use of unreclaimed abandoned mine land

113 Wildlife habitat

113 One major use of unreclaimed mine land is wildlife habitat. The quality of the habitat varies widely. It depends on the type of mining and the extent of toxic spoil, because they determine the type and density of vegetative cover for wildlife. Approximately 30 percent of all spoil banks provide fair to good cover. About 70 percent have little or no cover because of excessive stoniness or toxic conditions (USDI, 1967).

113 A large number of game animals use surface-mined land including white-tailed and mule deer, squirrels, bobwhite quail, rabbits, woodcock, does,

ruffed grouse, raccoons, and wetland and aquatic animals like beaver, muskrat, mink, ducks, and geese. Nongame animals such as groundhogs, small mammals, reptiles and amphibians, and numerous nongame birds also use surface-mined lands (Haynes and Klimstra, 1975; Arata, 1959; Mumford, 1973).

113 Fish habitat

113 Many waters in surface-mined areas will not support fish because they are polluted by runoff from acid spoils on gob piles (USDI, 1967; Haynes and Klimstra, 1975). However, strip mine lakes with a pH not less than 6.0 that are large and deep enough can support a good quality sport fishery (Burner, 1973) and some have been used in commercial fish production (Alverson, 1973).

113 Recreation

113 Unreclaimed mine lands are sometimes used for recreation. The major uses are probably hunting and fishing, but other activities have been observed (Haynes and Klimstra, 1975). These include swimming, picnicking, camping, and waterskiing. Other activities for which mined land is suitable are recreational vehicle use, nature study and photography, hiking, and horseback trails.

113 Grazing

113 Unreclaimed surface mines in Eastern United States are not used for livestock grazing even though the successional cover that may have volunteered onto them may have forage potential. These areas are frequently isolated or not associated with grazing operations. In Western United States, where the climax vegetation is short or tall grasses, some grazing may occur on the mined land. However, the quality and quantity of forage production is marginal.

114 Environmental Consequences

114 Introduction

114 This section of the EIS describes the environmental consequences of implementing the alternative programs described earlier. They are discussed in a general manner because site-specific impacts cannot be determined until individual applications for RAMP assistance are received from land users. SCS will conduct an environmental assessment for each RAMP application that will analyze the potential environmental impacts of reclaiming a specific area of abandoned coal mine land.

114 Environmental consequences

114 The environmental consequences of the "no action" alternative, i.e., no funding of RAMP, are as follows:

114 1. Up to 5,800 acres of abandoned coal mine land would not be reclaimed and developed annually;

114 2. Approximately 510,000 tons of soil erosion per year would continue to impair water quality and cause sedimentation of streams and lakes (this figure is based on a program that would have allowed conversion to all eligible land uses);

114 3. There would be no increase in agricultural production from land conversion; and

114 4. Numerous environmental benefits, such as more attractive landscapes and improved wildlife habitat, would not be realized.

114 The cumulative environmental effects of alternative programs are described below:

114 1. RAMP funding level:

114 Full funding of RAMP (approximately \$4 0 million) would reclaim an average of 5,800 acres of abandoned coal mine lands annually. Funding levels of less than \$4 0 million would proportionately reduce the number of acres reclaimed.

114 2. Geographic allocation of RAMP funds:

114 If the \$4 0 million funding were allocated to one region only and the others were excluded, it would reclaim 5,200 acres in the East, 7,200 acres in the Midwest, and 14,800 acres in the West.

114 3. Land use after reclamation:

114 Restricting land use after reclamation to either agriculture (cropland and pastureland) or wildlife, would result in an annual reclamation of 5,000 acres for intensive agriculture versus 5,800 acres for wildlife. (These figures are based on \$40 million annual funding.)

114 The range of environmental consequences of implementing the alternative RAMP programs is described in the following paragraphs. Land use

115 Table 1 shows the status of abandoned coal mine lands by geographic region under the following conditions:

115 1. Premining

115 2. Present

115 3. Future with reclamation

115 This table shows how land use would be changed by the proposed reclamation program. The net effect on land use was applied proportionally to the acres reclaimed annually. These estimates of net changes in land use provide an insight into environmental impacts.

115 Expected land use changes from reclamation varied greatly both between regions and within each region (see figure 8). The greatest land use increase expected in the East is in forest land, then pastureland, with a minor change expected in cropland. Approximately 67 percent of the abandoned mine land in the East was originally forest land before mining. However, land use after reclamation in the East is expected to be about 76 percent forest land. In the Midwest, the greatest land use increase is expected to occur in the acreage of pastureland, with forest land and cropland sharing the remainder. There were 163,000 acres of cropland mined in the Midwest, yet only 21,000 acres are expected to return to cropland following reclamation, assuming that all abandoned mine land in that region is reclaimed. This contrasts with the West where the greatest increase is expected in rangeland acreage with a minor increase in cropland. Most of the land that was mined in the West was originally rangeland and is expected to return to range use after reclamation. These land use increases represent the net effect of reclamation and reflect regional differences in climate, soils, and agricultural operations.

115 If reclamation takes place in all regions, it is estimated that for each 10 acres reclaimed, there would be one additional acre of cropland, three additional acres of pastureland, and six additional acres of forest land. (These figures are based on a weighted average of the number of acres of disturbed land in the three regions.) Obviously, the influence of the greater acreage of abandoned mine land in the East is reflected in the regional mix. Hence, the large number of acres reclaimed to forest land. It is further expected that part of the land reclaimed to forest land and rangeland will become wildlife land.

115 Selecting a specific set of variables for the final program could alter land use after reclamation. For instance, the \$40 million funding level combined with the major reclamation emphasis in the Midwest and conversion to agricultural land, would have a significant consequence on the land use after reclamation by emphasizing agriculture. Another program alternative would be \$40 million funding with reclamation in all regions, but emphasis on conversion to fish, wildlife, and recreation use. This would reduce the number of acres reclaimed for agriculture.

115 Table 2, Changes due to reclamation, shows the estimated annual impacts upon land, water, and cultural resources as they relate to the following factors:

115 1. Level of funding

115 a. \$0

115 b. \$20 million

115 c. \$40 million

116

*5*Table 1 -
Land use for
abandoned
mines: past,
present, and
with
reclamation
Premining land
use n1

	East	Midwest	West	Total
Cropland	95,900	163,200	5,500	264,600
Pastureland	86,100	48,900		135,000
Rangeland	32,300	30,900	14,300	77,500
Forest land	504,300	63,100	1,600	569,000
Other	33,000	9,500	400	42,900
Total	751,600	315,600	21,800	1,089,000
Present land use n2				
Cropland				
Pastureland				
Rangeland	32,900	75,500	14,400	122,800
Forest land	337,700	102,700	800	441,200
Other	381,000	137,400	6,600	525,000
Total	751,600	315,600	21,800	1,089,000
Land use with reclamation n2				
Cropland	33,100	21,500	500	55,100
Pastureland	99,300	64,500		163,800
Rangeland	15,000	72,400	20,100	107,500
Forest land	571,200	147,700	800	719,700
Other	33,000	9,500	400	42,900
Total	751,600	315,600	21,800	1,089,000
Effects of reclamation				
Cropland	33,100	21,500	500	55,100
Pastureland	99,300	64,500	0	163,800
Rangeland	-17,900	-3,100	5,700	-15,300
Forest land	233,500	45,000	0	278,500
Other	-348,000	-127,900	-6,200	-482,100
Percentage of net land use change for each				

10 acres reclaimed				
Cropland	+1	+2	+1	+1
Pastureland	+3	+5	0	+3
Rangeland	-1	0	+9	0
Forest land	+6	+3	0	+6
Other	-9	-10	-10	-10

116 n1 Based on land use figures (1967 CNI) for coal-producing counties and land use figures based on land resource areas (USDA, 1972).

116 n2 Assumptions (1) no intensive land use on abandoned mines and (2) reasoned approximations after review of Surface Mining and Our Environment, A Special Report to the Nation, U.S. Department of the Interior (1967), and (3) predominant land use before mining.

117 [See Illustration in Original]

118

11
Table 2
-
Annual changes due to reclamation

reclamation	Unit	Level of funding n1				Geographic distribution n2			Land use after n3
		None	20	40	East	West	Agric.	All	
Fish, wildlife & recreation	h0	6,900	6,900	7,600	5,600	2,700	8,000	6,900	6,900
Land reclamation cost per acre n4	acre	0	2,900	5,800	5,200	7,200	14,800	5,000	5,800

es										
1.										
Major										
land										
use -										
acres										
reclaim										
ed n5										
a.										
Croplan										
d acre	0	290	580	520	1,440	1,480	1,250	580	0	
b.										
Pasture										
land acre	0	870	1,740	1,560	3,600	0	3,750	1,740	0	
c.										
Rangela										
nd acre	0	0	0	-350	0	8,925	0	0	0	
d.										
Forest										
land acre	0	1,165	2,330	2,090	1,450	0	0	2,330	0	
e.										
Wildlif										
e land acre	0	575	1,150	1,030	710	4,395	0	1,150		
5,800										
2.										
Erosion										
a.										
Onsite										
reducti		265,00	530,00	480,00	540,00	900,00	440,00	510,00		
520,00										
on tons		0	0	0	0	0	0	0	0	
b.										
Onsite										
reducti										
on per										
acre tons	0	91	91	92	75	61	88	88	90	
3.										
Value										
of										
product										
ion n6										
a.										
Corplan					264,60	116,60	152,80			
d h0	35,500	71,000	43,200	0	0	0	71,000	0		
b.										
Pasture					187,10		177,10			
land h0	41,100	82,200	49,100	0	-	0	82,200	0		
c.										
Rangela										
nd h0			-1,600		39,400			0		
d.										
Forest										
land h0	12,200	24,500	21,900	15,200			24,500	0		
e.										
Wildlif										
e land NM	NM	NM	NM	NM	NM	NM		NM	NM	
f.		177,70	112,60	466,90	156,00	329,90	177,70			

1
resources

1.
Land
values

a.
Improved tax
Base

From	h0	150	150	130	300	80	290	150	NM
To	h0	300	300	260	600	160	580	300	NM

2.
Quality
of life

a.
Employment

1) Construction	man-yr	0	1,400	2,800	3,200	2,700	2,400	2,800	2,800
--------------------	--------	---	-------	-------	-------	-------	-------	-------	-------

2) Agriculture n8	man-yr	0	20	40	40	110	15	65	40	NM
----------------------	--------	---	----	----	----	-----	----	----	----	----

b.
Income

1) Construction	[000)	0	7,600	15,300	17,500	14,900	13,300	15,300	15,300
--------------------	-------	---	-------	--------	--------	--------	--------	--------	--------

2) Agriculture n9	[000)	0	105	210	200	530	80	315	210	NM
----------------------	-------	---	-----	-----	-----	-----	----	-----	-----	----

3.
Esthetics

a. Visual quality SE		0	NE	SE	SE	SE	SE	ME	SE	SE
-------------------------	--	---	----	----	----	----	----	----	----	----

b. Health & safety		0	NE	ME	MEHSE	SE	SE	SE	SE
-----------------------	--	---	----	----	-------	----	----	----	----

4. Recreation		0	SE	ME						
------------------	--	---	----	----	----	----	----	----	----	----

[See Table in Original]

120 n1 Funding (in millions of dollars) distributed among all regions and all land uses.

120 n2 \$4 0 million distributed to only one region but among all land uses.

120 n3 \$4 0 million distributed among all regions but only one type of land use after reclamation.

120 n4 The total cost to reclaim one acre.

120 n5 The net change expected to result from reclamation.

120 n6 Increased production multiplied by "current normalized prices," Agricultural Price Standards, WRC, October 1977.

120 n7 Value of production minus production cost per acre (exclusive of land reclamation costs).

120 n8 Annual rate of increase.

120 n9 Estimated impacts are probably overstated because they are based on national economy multipliers, (USDA, 1970); However, relative regional differences are identified through a weighting process (USDC, 1977).

120 NM-Not measured, NE-Not effective, SE-Slightly effective, ME-Moderately effective, HE-Highly effective

120 a-No change, b-Slight decrease in standing water; local improvement of stream quality and habitat.

121 2.Geographical distribution

121 a. East

121 b. Midwest

121 c. West

121 3.Land use after reclamation

121 a. Intensive agriculture only (cropland and pastureland)

121 b. All eligible land uses

121 c. Wildlife and recreation land uses only

121 In order to analyze the effects of these factors without evaluating all their possible combinations, it was necessary to evaluate the effects of each factor singularly. The most reasonable level of impact was then picked and used in combination with the other factors.For example:

121 1. It was assumed that funding was distributed among all geographical areas and among all eligible land uses.

121 2. Geographical distribution was considered in combination with a funding level of \$40 million distributed among all eligible land uses.

121 3. Land use after reclamation was considered in combination with a \$40 million funding level distributed among all geographical regions.

121 Soil erosion

121 The program's impact on soil erosion varies with the level of funding, the geographic area where the program is applied, and the land use after reclamation. As used in this statement, soil erosion consists of erosion caused by both water and wind. Wind erosion is a significant factor in Western United States.

121 Regional variations in climate, soil, type of spoil materials, and geomorphic settings limit the use of average figures to estimate erosion rates. However, figures that are representative of soil erosion conditions on abandoned coal mines were used to estimate the program's effects on erosion.

121 The following SCS estimates were used to calculate the RAMP's impact on soil erosion:

Use	Representative annual erosion rate (tons per acre)
After reclamation	
Rangeland	4
Cropland	5
Pastureland	3
Forest land and/or wildlife land	2
Before reclamation	
Mine spoil that has been partly reclaimed by natural or artificial actions	10
Unvegetated or unprotected mine lands:	
East	100
Midwest	75
West	60
Land intensely disturbed by mine activity including haul roads, tipple sites, dumps, gob piles, etc.	
East	150
Midwest	110
West	90

122 Stabilizing areas affected by mining will significantly decrease soil erosion. The annual nationwide decrease in soil erosion was estimated to range from 0 to 900,000 tons depending on the annual funding level.

122 The reduction of soil erosion would vary if funds were allocated to only one region. This would occur because of the differences in reclamation costs between regions. If the \$4 0 million were allocated to only one region, the annual soil erosion reductions would be: 480,000 tons for the East; 540,000 tons for the Midwest; and 900,000 tons for the West.

122 The level of soil erosion reduction also depends on the type of land use after reclamation. Assuming a \$4 0 million funding level and a nationally applied program, the following are the estimates of erosion reduction:

Land use after reclamation	Annual reduction of erosion (tons)
Wildlife use only	520,000
All eligible uses	510,000
Agricultural uses only	440,000

122 Reclamation activities will increase short-term erosion until vegetation becomes established. This would last approximately 1 to 3 years in the East and Midwest and 3 to 5 years in the West.

122 Storm water runoff

122 Restoring mine areas will significantly affect storm water runoff. Storm water runoff is considered to be that portion of rainfall that exceeds the soil infiltration rate. Reclamation would affect surface runoff by changing or improving ground cover. Other factors that would affect surface runoff are: (1) applied conservation practices that control runoff and (2) the soil's ability to absorb water.

122 The amount of runoff from abandoned mine land was estimated before and after reclamation. Changes in runoff were used to evaluate different program alternatives. The analysis considered the effects on runoff if RAMP were applied throughout the Nation and then if it were applied to only one region.

122 SCS procedures were used to estimate direct runoff (SCS-NEH-4). The type of vegetative cover was based on the projected land uses shown in table 1. The dominant hydrologic soil groups were identified on the basis of the land resource areas where the abandoned mine land was located (Dougherty and Holzen, 1976).

122 The analysis showed that storm runoff from 2.5 inches of rainfall could be reduced by 40 percent for the total area reclaimed. A 2.5 inch rainfall was used in all runoff determinations because it is the equivalent of the average

annual storm in the East and Midwest. There is a larger storm frequency in the West, but this figure was used for parallel comparison. The reduction in runoff decreased rapidly for larger storms.

122 How different versions of the program affect runoff is shown in table 3. The western region has the highest percentage of reduction in runoff because it has the highest soil infiltration rates. The amount of runoff reduction was similar in the East and Midwest. The average reduction in runoff from abandoned mine 1 would be 39 percent after reclamation. Reclamation would reduce runoff from a storm of 2.5 inches by an average of .42 inches per acre. If RAMP reclaimed 5, acres per year, storm water runoff from that land would be reduced by 203 acre-

123 Flooding

123 Reclaiming mined land would reduce direct runoff from smaller storms but would have less effect on runoff from larger storms. How reclaiming abandoned [*] affects flooding depends mainly on the infiltration rate of soil material, depth of the material, retention measures installed, and storm characteristics. [*] that would be used in resource management systems to reclaim mined land would reduce surface runoff significantly during larger storms. However, an exception is noted in a study made by the U.S. Forest Service in Appalachia that compare mined and unmined areas and found a reduced peak of surface runoff [*] large storms on mined areas (Curtis, 1977). These mined areas had large [*]ies broken rock that created storage space for water.

123 Estimates on runoff reduction from implementing RAMP indicate that [*] only a slight effect on downstream, flood-prone locations because [*] and distribution of acres that would be reclaimed.

123 Ground water

123 The potential impact of RAMP on ground water is site-specific. Conservation practices that increase infiltration could increase ground water [*] I increased recharge encounters toxic substances in the soil, ground water pollution may occur.

123 The pollution could deteriorate ground water locally and adversely affect well If polluted ground water emerged in streams as base flow, surface [*] would deteriorate downstream from the reclaimed site.

123 In areas where increased infiltration could lead to ground water

pollution, [*] reclamation methods could direct runoff from recharge areas and conduct it [*] downstream. This technique has been used on the Campbell Run [*] County, Pennsylvania, where reclamation methods were designed to minimize in tration (Dougherty and Holzen, 1976). This study showed that reclamation, [*] concert with other changes in surface and subsurface drainage patterns, cause 43 percent reduction in acid mine drainage.

123 The effects of the program on ground water quality and quantity would be
 lim Careful assessment of the hydrologic system as part of the environmental
 ass should limit any adverse effects that program actions might have on ground
 was

123 Surface water and area

123 The quantity of surface water that the program would affect is difficult to [*] because such effects would be site-specific. A greater level of funding would allow treatment of a larger area. A program conducted in the West would have greater area of impact per unit of cost than one in Eastern or Midwestern Uni

123 *9*Table 3 - Impacts on storm runoff

123 *9*Program components

123 Runoff *3*Funding (millions) *3*Geographical District *2*Land use after reclamation characteristic \$0 \$20 \$40 East Midwest West Agriculture Fish, wildlife, rec.

123 *CN before reclamation 83 83 83 82 83 79 83 83

123 *CN after reclamation 75 75 74 76 70 76 74

123 Percent reduction in runoff n1 39 39 40 44 46 34 43

123 Reduction in inches n1 .42 .42 .40 .36 .37 .36 .46

123 Reduction in acre-feet n1 102 203 173 216 456 150 222

123 Acres treated 2,900 5,800 5,200 7,200 14,800 5,000 5,800

123 n1 Based on a hypothetical storm of 2.5 inches of rainfall

123 * CN = Hydrologic curve number based on soil and vegetative cover

125 States because of the lower reclamation costs in the West. On the other hand, more severe problems are located in the East and Midwest.

125 Reclamation under RAMP would increase the length of unpolluted streams. Water surface area might decrease slightly because strip mine pits that presently hold water may be refilled during reclamation. These pits sometimes contain poor water and are limited in their ability to support aquatic life. Pits that contain water of good quality can be preserved as part of the reclamation effort.

125 Water quality

125 Degraded water quality frequently accompanies strip mining. Changes in hydrologic flow patterns that result from mining alter the quantity of water passing through various parts of the hydrologic system. The disturbance, crushing, and reduction in size of earth materials that occurs during mining produces fresh surfaces. These surfaces decompose chemically and contribute to the mineralization of ground and surface waters. Highly mineralized, low pH waters are common because of the breakdown of pyrite minerals in coal-bearing strata and associated rocks. Large amounts of suspended sediment from the erosion of these areas cause pollution and increase turbidity.

125 Reworking of spoil material during the reclamation process can frequently provide a fresh chemical source and this temporarily increases pollution problems. Revegetation allows the chemical load of the materials to be reduced with time (Riley, 1963). Diverting water from areas of toxic spoils will reduce the effects of mine acids on downstream waters.

125 The reduction in sediment from a mine reclamation program is difficult to quantify because of systematic variation in the sediment delivery system. Reduced erosion would decrease sediment yield, damage, and pollution in downstream waters. The reduction in sediment is not directly proportional to the reduction of erosion because of differences in watershed geomorphology, instream channel deposits, and the hydraulic efficiency of the delivery system. However, conservation plans would significantly decrease sedimentation by decreasing erosion.

125 Sediment yields from watersheds affected by mining are generally high. The U.S. Geological Service reports an annual sediment yield of 1,900 tons per square mile from a mining-affected watershed in the Beaver Creek Basin (Collier, et.al. 1970). This compares with a yield of 25 tons per square mile from an unmined part of that area.

125 Reclamation activities reduce sedimentation rates downstream from the reclamation area. Studies by the SCS in Kentucky have reported that 3 years after reclamation, the sediment yield to a drainage basin was reduced to one-sixth of the prereclamation yield (Everett et.al., 1974).

125 Conservation plans under RAMP will generally improve water quality. The effects depend on the size of the area being treated and the funds available. The effects will be locally significant but will decline as the drainage area increases relative to the treated area. Water quality could deteriorate locally for several years after the reclamation period because of the disturbance of mine spoils. Sediment-related pollutants are more readily decreased by reclamation activity. Care will be exercised in assessing and analyzing each site to ensure that treatment will have positive effects on stream water quality. The overall effects of RAMP on water quality are positive. Sites where reclamation actions could deteriorate water quality will be identified during assessment and appropriate treatment will be used to improve water quality. Water quality improvement would be one of the principal benefits of this program.

126 Wildlife habitat

126 RAMP will affect fish and wildlife by changing: the amount, distribution, kind of quality of habitat. This would be done by: (1) land use changes, and (2) the establishment and maintenance of conservation practices to (a) control erosion and provide for sustained use of the resource base, and (b) further improve the quality of the environment.

126 Unreclaimed or inadequately reclaimed surface-mined land provides only low quality fish and wildlife habitat. Therefore, any reclamation program that restores the land will significantly benefit fish and wildlife. The Fish and Wildlife Service has estimated that reclaimed surface-mined areas can support five times as much hunting and fishing as unreclaimed land. If lands were developed specifically for hunting and fishing, use would be increased eight times (Spaulding and Ogden, 1968). Reclamation to any eligible land use according to SCS standards and specifications will ensure a wildlife habitat base of greatly improved quality and increased diversity.

126 Eligible land could be reclaimed for cropland, grassland, rangeland, forest land, and wildlife land. Each of these uses provides critical elements for wildlife habitat such as reproductive cover, resting cover, escape cover, food, and water.

126 Critical habitat elements on cropland include food in the form of green plant parts, grain and weed seeds, and cover provided by growing crops or their residues. Cover is also provided by fence rows, field borders, waterways, or odd areas within or around the crop field. Conservation practices normally applied to cropland to improve habitat quality are: minimum tillage methods that leave crop residues for wildlife use; practices that provide nesting and roosting cover such as grass field borders, grassed waterways, stripcropping, or

vegetated terraces; and those practices that provide woody cover or travel lanes such as field windbreaks.

126 Grassland, including improved pasture, native pasture, and hayland, furnishes nesting cover, roosting cover and food in the form of seeds, stems, and the foliage of legumes and grasses. Conservation practices applicable to grassland are pasture and hayland management to maintain fertility, restrict use of pasture plants to specified minimum heights, and control invading plants. Pond or spring developments that provide livestock water also benefit a variety of wildlife species.

126 Rangeland has a wide variety of naturally occurring grasses, forbs, and shrubs that furnish food and cover for both wildlife and livestock. Conservation practices for rangeland are those that maintain plant species composition, vigor, and grazing height, such as deferred grazing and proper grazing use; and those that increase the carrying capacity of range, such as burning, brush management, and seeding of desired plants.

126 Critical habitat elements in forest land are trees that produce nuts, fruits, and seeds; vines and shrubs; tree cavities or other den sites; openings vegetated with a variety of grasses and forbs; and water (springs, seeps, waterholes, or streams). Conservation practices applied to forest land include harvest cutting, thinning, and timber stand improvements that improve the species and age composition of the timber stand and protect active den trees or important food-producing trees. Essential treatment of forest land also includes protection from wildfire and from overuse by livestock.

126 Wildlife land can include wetlands plus any of the land uses discussed above if they are managed primarily for wildlife habitat. The conservation practices applied to wildlife land can include any of those applicable to other land uses, plus a number of practices designed specifically to create or improve wildlife habitat. These include, but are not limited to, planting food plots of grains or legumes, building wildlife waterholes, planting trees or shrubs for additional cover, and improving or creating wetlands.

127 Table 2 shows annual land use changes due to reclamation under three program variables. Under full funding with no restrictions on geographic distribution or land use, an average of 5,800 acres will be reclaimed annually. This will result in 5,800 acres of diversified habitat, with approximately 1,150 acres managed exclusively for wildlife. The remaining 4,650 acres will receive basic conservation treatment guaranteeing an improved level of habitat quality

over prereclamation conditions. A funding level of \$2 0 million annually would reduce these acreage values proportionately.

127 At the \$4 0 million level restricting funding to only the East, Midwest, or West would result in a total reclamation of 5,200 acres, 7,200 acres, and 14,800 acres, respectively. Land managed primarily for wildlife would total approximately 1,030 acres, 710 acres, and 4,395 acres, respectively.

127 The effect of restricting eligible land uses to only cropland and pastureland or to only wildlife land was compared to applying no land use restrictions. The first option would benefit wildlife least because land would be used intensively, diversity would be limited, and no land would be devoted primarily to wildlife. The second option would maximize wildlife benefits because all land would be managed primarily for wildlife. However, intensive management would be necessary in order to supply all essential habitat elements.

127 Production returns

127 Reclaiming abandoned mine land for agricultural production would be a beneficial impact. The extent of the impact would be determined by the number of acres reclaimed to cropland, rangeland, pastureland and woodland; the production from this land; and the economic return from production.

127 How the economic impact is affected by the proposed program alternatives (level of funding, geographic distribution of funds, and land use after reclamation) can be estimated. These figures are shown in table 2.

127 Typical commodities were selected by region for each land use and an estimated yield for the reclaimed land was assigned. This yield was multiplied by the net increase in acres in that land use generated by the reclamation program. The economic value of each was then computed using estimated current normalized prices (U.S. Water Resources Council, 1977).

127 The greatest economic returns would result from reclaiming mined land in the Midwest only. Its topography, soils, and climate allow a greater portion to be reclaimed to cropland than in the East or West. A dollar benefit for this alternative is \$467,000 annually.

127 Table 2 indicates that the increase in the value of production per acre for the Midwest is three times greater than the increase in the East and about six times greater than the increase in the West. This should be interpreted with caution, however, since these increases reflect estimates in land use changes, production, and typical commodities. Another approach might simply compare the increase in the value of production per acre of cropland reclaimed. Once again the Midwest has the greatest economic advantage. However, the

relative difference is much less. The increase in the Midwest is \$184.00 per acre; in the East \$83.00 per acre; and in the West \$79.00 per acre. On this basis, the figures for the Midwest are only 2.2 times greater than the East's and 2.3 times greater than the West's. These calculations assume that each acre reclaimed to cropland in the Midwest will be in corn, in the East in hay, and in the West in wheat.

128 From a production standpoint, a favorable program alternative is using full funding to reclaim land in all regions for agriculture only. If this alternative were chosen, agricultural production would increase by \$330,000. The least dollar returns would be from conversion to woodland and rangeland production.

128 The net increases in production for different alternatives are shown in table 2. These production increases are shown for each land use. Although the assessment ratio and the millage per thousand for each geographic region are unknown, it is possible to estimate the income-producing potential of the land from estimated values of net income per acre. Theoretically, the tax structure is directly related to the value of the land. The net income-capitalization approach is one of many ways to estimate land values. Table 2 displays the capitalized net income per acre for two levels of return. A lower value per acre is capitalized at 10 percent interest and the higher value is capitalized at 5 percent interest. RAMP would increase land values per acre from \$130.00 to \$260.00 in the East, \$300.00 to \$600.00 in the Midwest, and \$80.00 to \$160.00 in the West. The effect of RAMP if funding were distributed nationally would be to increase land values \$150.00 to \$300.00 per acre. These land values are associated with agricultural production only. The higher increase in land values in the Midwest reflects this region's more intensive agricultural production. The net income-capitalization approach to land appraisal yields figures that are generally less than those from the market value or comparative approach. This is because land sometimes sells at values higher than its income-producing potential.

128 Most of the land expected to be involved under RAMP is privately owned. Upon sale of this property, the increase in land values would become subject to capital gains tax.

128 Income and employment

128 RAMP will provide increases in output in both the construction industry and in agriculture. The increases in output, resulting from changes in final

demand, will generate changes in income and employment. These changes represent the following items (AEC Tech.Pub., 1971):

128 1. Direct effect - the initial effect provided by the increase in output.

128 2. Indirect effect - the influences that a change in output in one sector will have on the rest of the economy.

128 3. Induced effect - the effects that result from changes in household consumption expenditures as income changes.

128 Table 2 displays employment and income changes for different program alternatives. These are based on published multipliers that help estimate the spinoff effects of expenditures (USDA, 1970) and are adjusted for program alternatives using output multipliers by region (USDC, 1977). The estimated impacts are overstated because they are based on "national" economic multipliers. However, relative regional differences are identified. The income and employment changes shown include only the direct and indirect effects as defined above. If the induced effect had been included, the estimated impacts would be much greater.

128 The increase in employment resulting from spending \$4 0 million on construction would provide an estimated 3,200 man-years if the funding were spent only in the East. The same funding would provide 2,700 and 2,400 man-years of employment if it were spent in the Midwest and West, respectively. The estimated man-years of employment resulting from \$4 0 million spent on construction is 2,800 man-years for the program alternatives that apply nationwide.

129 The employment effect generated by the increase in agricultural output ranges from a high of 110 man-years in the Midwest to a low of 15 man-years in the West. There would be an increase of 40 man-years if all the funding were spent in the eastern region. The same effect is expected if the funding were spent in all three regions based on a weighted average of the acreage of abandoned coal mined land in each.

129 The income effect is represented by increases in household income that occur when changes in output result in changes in final demand. The greatest increase in household income resulting from the increased output in construction occurs in the eastern region. The \$4 0 million spent in the East would increase household income by \$1 7 million. Refer to table 2 for household income generated by other program alternatives.

129 The greatest increase in income from increased agricultural output would be in the midwestern region. In this region, a \$4 67,000 increase in agricultural production would generate an additional \$530,000 increase in income.

129 The magnitude of employment and income changes reflect regional differences in population, transportation, natural resources, and industrial organization. The construction industry provides the greatest impact in the East, whereas agriculture provides the greatest impact in the Midwest.

129 There are two major differences between the employment and income effects generated by construction and agriculture. Construction effects are contingent upon annual funding, while agricultural effects are constant over time once an acre has been reclaimed. Consequently, the agricultural effect is actually a "rate of increase" and is cumulative through the life of the program. When additional acres are no longer reclaimed, the employment and income effects become constant.

129 The effect on employment and income resulting from the increased cost of coal was not evaluated.

129 Another potential economic impact on program participants is the tax liability of the land user; if the cost-share portion provided by RAMP is determined to be taxable income. A ruling by the Commissioner of the Internal Revenue Service has been requested.

129 The economic benefits are insufficient to offset the costs of reclamation. Although certain economic benefits, both public and private, are anticipated, the primary purpose of Public Law 95-87, Section 406, is to improve the quality of the environment.

129 Esthetics

129 1. The visual quality of areas being reclaimed will be temporarily impaired during construction activities.

129 2. Shaping and grading of abandoned coal mine spoils will alter the present topography of reclaimed areas.

129 3. Air pollution, in the form of dust and exhaust fumes, will increase during construction operations.

129 4. Conservation treatment will significantly enhance the visual quality of abandoned coal mine lands.

130 5. Converting abandoned coal mine lands to more beneficial land uses will encourage the public and landowners to stop using these lands for disposal of trash, garbage, junked vehicles, etc. The reduction of such misuse will improve the appearance of these areas.

130 6. Converting abandoned coal mine areas to more beneficial land uses and applying conservation treatment will enhance esthetic values by increasing visual diversity.

130 Archeological and historical resources

130 It is very doubtful that significant archeological or historical resources would still exist in abandoned coal mine areas. The tremendous movements of earth and the topographic changes caused by mining would have destroyed any such resources in most cases. However, SCS will follow its own procedures and applicable State and Federal laws concerning archeological and historical resources. The potential presence of such resources will be evaluated during the environmental assessment that is conducted for each agreement.

130 Public safety

130 1. Stabilizing areas subject to landslides or other hazardous conditions will improve public health and safety.

130 2. Shaping and grading abandoned coal mine areas may, in some instances, eliminate attractive nuisances like dangerous water areas, and also reduce mosquito and vermin habitat.

130 3. Reclaiming abandoned coal mine areas used for trash disposal will reduce the habitat for rats and other vectors.

130 Recreation

130 Unreclaimed surface-mined land is sometimes used for swimming, boating and waterskiing, fishing, hunting, picnicking, camping, and trails for bicycles. Some areas are used for fossil hunting, hiking, and nature study (Spaulding and Ogden, 1968; Haynes and Klimstra, 1975; USDI, 1973).

130 Land reclaimed under RAMP may be used for cropland, pastureland, hayland, rangeland, forest land, and wildlife land. Recreation is eligible only to the extent that it is associated with these primary uses. Therefore, the main factor limiting recreation activity on reclaimed land will be its compatibility with the primary land uses. For example, fishing and nature study should be highly compatible with most land uses, hunting with all land uses except pastureland, and bicycling with none of the land uses.

130 Other factors that will affect both the type of activity and the amount of use are: (1) changes in basic resources - vegetation, topography, water quality, wildlife habitat quality, and esthetics, and (2) the access granted by the landowner after reclamation, questions of landowner liability, and the landowner's attitudes toward hunting and other types of recreation. Table 4 summarizes these factors and their anticipated effect on recreation on reclaimed

land. It should be noted that RAMP's impact on recreation will be limited to the small scattered parcels of land directly affected by the program.

130 Since the major factor affecting recreation on reclaimed land is its compatibility with eligible land uses, it follows that those program alternatives that do not emphasize intensive uses, like cropland and pastureland, will allow the most recreation. If funding were restricted to only one region, the greatest positive impact on recreation would occur in the West. The positive effect would be less in the East and least in the Midwest. The effect on recreation would be even more pronounced if only certain types of land use were permitted after reclamation. If cropland and pastureland were the only eligible uses, there would be a negative impact on all recreation activities, with the possible exception of hunting, while restricting use to wildlife land would have the greatest positive impact on all types of recreation.

130 Adverse impacts that cannot be avoided

130 The adverse environmental impacts of RAMP that cannot be avoided are related principally to construction activities. These impacts are the short-term effects of noise, increased erosion, sediment production, construction traffic, and other construction activity. They would end once construction is finished and conservation treatment has been established.

130 Wildlife habitat that now occurs on reclamation sites would be temporarily lost or impaired during the construction period. Overall increases in habitat would occur after reclamation.

130 Incidental recreation on spoil areas may decrease locally as a result of land use conversion. An overall increase in incidental recreation will occur from the program as a whole.

130 Relationship between local short-term uses and long-term productivity

130 The funding and implementation of RAMP through 5- to 10-year agreements will provide lasting economic and environmental benefits. These benefits will persist well past the lives of the agreements. The limited length of the agreements will not prevent landowners from changing the use of their land in the interest of long-term productivity. After an agreement expires, the landowners will be able to change the use of reclaimed land. However, it is anticipated that landowners would normally continue the land use established during the RAMP agreement.

130 RAMP would benefit both the individual and the Nation. Although each RAMP agreement would not be a major action, cumulatively they would provide significant benefits on a local and regional scale over the life of the project (15 years as funded by the reclamation fee assessed under Section 402(b) of Public Law 95-87). Assuming an annual funding level of \$40 million, the

program could provide treatment for 75,000 to 220,000 acres (8 to 20 percent) of the abandoned coal mine land.

130 Depending on land use after reclamation, agricultural production could increase as much as \$5 00,000 annually. Wildlife would benefit because much of the reclaimed land use would be used as wildlife habitat and any land developed for agriculture could also provide additional food and cover for certain wildlife species.

130 Soil erosion would be reduced by approximately 7.5 million tons during the 15-year life of the program. This reduction in erosion will result in reduced sediment pollution. As sediment pollution and toxic chemical discharge from acid mine drainage decrease, stream water quality will improve in the benefited areas. This will create increased fish habitat in downstream areas. These positive program impacts will be intensified in certain areas because the program is funded to give priority to areas with the greatest environmental damage and threats to public safety. Areas subject to landslides or other hazardous conditions will be stabilized to reduce hazards to life and property. Other social and economic benefits would come from increased tax bases, the elimination of vector habitats, and improvements in the visual quality of affected lands.

132

*4*Table 4. - - -
 Factors affecting
 use of reclaimed
 lands for selected
 recreation
 activities

Recreation Activity	Positive factors	Negative factors	Anticipated net effect of
Hunting	Increased productivity due to improved quality and diversity of habitat on all land uses. Some land to be devoted exclusively to wildlife use. Improved water quality. Greater productivity of remaining surface water. Some land devoted exclusively	Reduced amount of surface water to attract waterfowl; some degree of incompatibility with pastureland; landowner resistance to public access. * Reduced amount of surface water; incompatible with some land uses; landowner	Positive

Fishing	to fish and wildlife use. Improved fish and wildlife habitat, greater diversity of land uses;; improved environmental quality and esthetics.	resistance to public access. *	P Positive
Nature study and photography	Improved water quality.	Landowner resistance to public access. * Reduced amount of surface water; landowner	Positive
Boating, swimming, and water skiing	Improved environmental quality and esthetics.	resistance to public access. * Landowner resistance to public access; * incompatibility with some land uses.	Negative
Picnicking and camping	Improved environmental quality and esthetics.	Reduced land relief would provide fewer challenges, incompatibility with all land uses; landowner	Negative
Recreational vehicle use [See Illustration in Original]	Improved environmental quality and esthetics.	resistance to public access. *	Negative

132 * Fear of liability, vandalism, and littering, or aversion to hunting.

133 Irreversible and irretrievable commitments of resources

133 Energy, technology, and raw materials used for reclamation will be irretrievably committed in implementing any RAMP alternative. The commitment of financial resources to install the conservation and development plans must also be considered irreversible and irretrievable. However, some RAMP funds may be refunded by land users who violate the terms of the agreement.

133 Land use changes cannot be considered permanent because they are controlled only during the 5-to 10-year agreement period. Inasmuch as the reclaimed land use is the choice of the land user and provides continuing benefits, the reclaimed use should continue after the end of the agreement period.

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135 The assistance provided by many other people and local, State, and Federal agencies and groups is gratefully acknowledged. The testimony and recommendations provided by the public at the five regional meetings are especially appreciated.

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137 Copies of the statement have been sent to attendees of public meetings held in Sheridan, Wyoming; Pinckneyville, Illinois; Morgantown, West Virginia; Hazard, Kentucky; and Washington, D.C.

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141 DRAFT IMPACT ANALYSIS RURAL ABANDONED MINE PROGRAM

141 Date: March 31, 1978

141 Agency: USDA-SCS

141 Contact: James B. Newman

141 Phone: 202/447-2324

141 1. Title: Development and implementation of policy, rules, and regulations for a Rural Abandoned Mine Program (RAMP) as authorized by Section 406 of Public Law 95-87.

141 2. Proposed Actions and Groups Impacted

141 Proposed program objectives: To protect people and the environment from the adverse effects of past coal mining practices. To promote resource development on unreclaimed lands.

141 Proposed program operations: Under 5 to 10 year contracts, provides technical and financial assistance, on a voluntary basis and through conservation districts, to develop and apply conservation plans for the reclamation, conservation, and development of eligible coal mined lands and water up to 320 acres per owner.

141 Land users would make application for assistance through the SCS field office. SCS district conservationists will verify information on the

applications and assign priority in consultation with the local conservation district or the local reclamation committee. According to the priority assigned, SCS would assist the land user in analyzing and evaluating acceptable reclamation alternatives and environmental impacts. The land user would then select the feasible and practical land use and treatment alternatives that best meet his reclamation objectives for inclusion in the conservation plan. The conservation plan would then be approved as the basis of a program agreement for cost sharing. Reclamation, land use, and conservation treatment would then be applied according to the agreement. SCS would make an annual status review to assure compliance with the agreement.

141 It is expected that Federal cost-sharing rates close to 100 percent may be necessary to obtain desired level of program participation.

141 Proposed Federal cost-share rates: From 60 to 100 percent depending upon the number of acres reclaimed, whether or not reclamation costs can be recovered over the contract period, and whether or not the main benefits are offsite or accrue to the landowner or user.

141 Proposed priorities for funding reclamation work are : (1) Protection of public health, safety, general welfare, and property from extreme danger of adverse effects of past coal mining practices; (2) protection of public health, safety, and general welfare from adverse effects of coal mining; and (3) restoration of the environment and land and water resources where previously degraded by the adverse effects of past coal mining practices.

142 Groups impacted:

142 (a) The program will impact directly on:

142 (1) land users that are eligible for and choose to participate in the program. Eligible land users include land owners, owners of water rights, residents, tenants or their agents, operating as individuals, partnerships, corporations, associations, or estates, controlling lands or water affected by coal mining processes and abandoned or inadequately reclaimed before August 3, 1977; and

142 (2) coal operators who are required to pay a fee per ton on coal produced over the next 15 years to finance reclamation of abandoned lands.

142 (b) The program will indirectly impact on:

142 (1) consumers and producers of agricultural, forestry, and recreation outputs through increased productive capacity; and

142 (2) owners and residents of adjacent or neighboring lands through reduced sediment damages, improved water quality, and visual aesthetics.

142 3. Purpose and Need for Action

142 According to the 1977 SCS inventory of abandoned mine lands, approximately 1.1 million acres of coal mined lands need reclamation. Of this total, 753,000 acres are in the East (Appalachia), 310,000 acres are in the Midwest, and 24,000 acres are in the West. An estimated 70 percent of these lands are owned by large corporations. This program would propose to treat as much as 20 percent of this total. Other reclamation programs authorized by Public Law 95-87 and administered by the Office of Surface Mining would treat the balance.

142 Generally, the following adverse problems are associated with abandoned coal mined lands: Landslides, fire, subsidence, flooding, acid drainage, erosion, sediment, dust, insects and vermin. Also, the useful function and visual quality of the land is greatly impaired.

142 Three other State and Federal programs authorized by Public Law 95-87 are designed to reclaim abandoned mine lands in conjunction with this program.

142 4. USDA and Other Federal Costs

142 The proposed program will be financed by per ton reclamation fees assessed on coal mine operations for deposit in the Abandoned Mine Reclamation (trust) Fund. The fund is authorized to receive deposits for 15 years. Upon appropriation, up to 20 percent of the money deposited in the fund will be transferred to USDA to operate RAMP.

143 Estimated annual deposits to the fund are \$2 00 to \$2 50 million. A full 20 percent transfer to USDA would amount to \$40 to \$5 0 million annually to support RAMP. For Fy 1978 and Fy 1979, the Office of Management and Budget has authorized \$5 million and \$1 0 million respectively to operate the program.

143 Estimated average costs of reclamation range from \$4 ,000 to \$8 ,000 per acre depending upon the program option selected. The Federal share of these reclamation costs, which include both financial and technical assistance, will vary depending upon the complexity of the reclamation problem and the cost-share percentage applied. The proposed cost-share percentage range is 60 to 100 percent. Technical assistance costs are estimated to be \$2,000 per acre over the life of the land user's agreement.

143 Federal personnel requirements are 55 man-years for a \$5 million annual

program, 110 man-years for a \$1 0 million program, and 440 man-years for a \$40 million program.

143 5.Expected Impacts

143 A \$4 0 million annual program is expected to have the following impacts:

143 (a) Main purpose and need to which action is addressed

143 1. Reclaim an estimated 5,700 acres of eligible land. Ten percent of the reclaimed lands are expected to be used as cropland, 30 percent for pasture, and 60 percent for forest purposes.

143 Depending upon the regional allocation of funds, the post reclamation land use, and total receipts to the fund over its 15 year life, the total potential area to be reclaimed is estimated at between 75,000 and 220,000 acres, or up to 20 percent of eligible lands.

143 2. Reduce erosion on reclaimed lands by 493,000 tons or by over 86 tons per acre.

143 Post reclamation annual erosion rates per acre are estimated at: five tons for cropland; 4 tons for rangeland; 3 tons for pasture; and 2 tons for forestland and/or wildlife land.

143 Reclamation is expected to reduce water runoff by 34 to 46 percent.

143 These impacts are expected to be forthcoming for the life of the cost-sharing agreements - 5 to 10 years. They may continue after contracts expire but are not assured.

144 (b) Cost and return impacts

144 Per acre estimated costs of reclamation by region are: \$2,700 for the West; \$5 ,600 in the Midwest; and \$7 ,600 for the East. The average cost of reclamation is estimated at \$7,000.

144 Estimated reclamation costs per acre by post reclamation land use are: \$8,000 for cropland and pasture; and \$6 ,900 for all other uses. The average cost of reclamation over all land uses is \$7,000 per acre.

144 Net annual income per acre exclusive of reclamation costs from additional productive capacity is estimated at \$8 in the West; \$30 in the Midwest; and \$1 3 in the East. Average net annual income from reclaimed lands is estimated at \$18 per acre.

144 (c) Other significant economic impacts

144 A \$40 million annual program could create additional capacity to to

produce agricultural and forestry products valued at between \$1 13,000 and \$4 67,000 annually at 1977 current normal prices. During surplus periods, this additional capacity could aggravate farm price/income problems. In slack periods, the additional capacity could help alleviate shortages.

144 Reclaimed lands are expected to double in value.

144 A \$4 0 million annual program could create an estimated 2,415 to 3,240 jobs nationally. Annual additional household income created by this program is estimated at \$13.4 to \$1 7.7 million nationally. These estimates include indirect, and induced effects. Unless reclamation occurs in areas suffering cyclic unemployment or under-employment, the income impacts could be inflationary and may displace activity in other areas or sectors.

144 Reclamation of abandoned mines make considerable use of heavy equipment and should be regarded as an intense use of energy resources.

144 (d) Other significant social effects

144 The program is expected to protect life and property; reduce hazards to helath and safety; and reduce environmental degradation.

144 (e) Distribution effects

144 Eligible abandoned mine lands are located in 29 States. Over 90 percent of eligible lands are located in 169 counties in 19 States including Alska, Maryland, Texas, Arkansas, Colorado, Wyoming, Iowa, Virginia, Tennessee, Oklahoma, Kansas, Missouri, Alabama, West Virginia, Kentucky, Illinois, Ohio, Indiana and Pennsylvania.

144 Up to 320 acres of eligible lands and water per land owner are eligible for assistance. Except to exclude Federal lands, the proposed rules do not discriminate among potentially eligible landowners or users.

145 6. Options Considered

145 a. Targeting at specific regions. Operation of a \$4 0 million annual program would produce the following estimated impacts if targeted at the specified regions.

	East	Midwest	West
Cost per acre	7,600	5,600	2,700
Acres reclaimed	5,200	7,200	14,800
Net income * (dollars)	66,000	213,200	119,000
Erosion reduction (tons)	480,000	540,000	900,000
Runoff reduction (percent)	40	44	46

145 * Exclusive of reclamation costs.

145 Only 21,800 acres of eligible land are located in the West. Water quality degradation due to abandoned mine lands are most severe in the East.

145 Decisions on this option will not be made until after public comment is received.

145 b. Alternative specified post reclamation land uses. The Agency feels that reclaiming lands and water to less than forest, fish and wildlife status would not solve water quality problems and no lower level of reclamation is presently being considered. However, of the 1.1 million acres of abandoned mined land, about 40,000 to 55,000 acres may be suitable for a higher level of reclamation which would permit land to be used for crops or pasture. Additional benefits of reclamation to agricultural uses accrue almost exclusively to the land owner or operator, and in fact, the public benefit of erosion reduction is less when land is reclaimed to cropland or pasture uses. At issue is whether the Federal Government should increase its contribution to cropland or pasture uses. The table below compares the estimated impacts of a \$4 0 million program if the Federal contribution is increased to cover the higher cost of reclamation to cropland or pasture uses. An option is to limit the Federal contribution to a share of the cost of reclaiming acres to forest and fish and wildlife use, and to require landowners to bear additional costs for reclaiming land to agricultural uses.

	Cropland and pasture	Forest, recreation and fish and wildlife
Cost per acre (dollars)	8,000	6,900
Acres reclaimed	5,000	5,800
Net income * (dollars)	90,000	insignificant
Erosion reduction (tons)	440,000	520,000
Runoff reduction (percent)	34	49

145 * Exclusive of reclamation costs.

145 Decisions on this option will not be made until after public comment is received.

146 c. Cost-sharing rates

146 Authorizing legislation specifies that, depending on the income-producing potential of the land after reclamation, the Federal share shall provide up to 80 percent of the cost of carrying out conservation treatment and land uses on up to 120 acres per owner with exceptions where:

(1)

the main benefits from the project are offsite; and (2) the owner's share would be a burden that would probably prevent his participation in the program.

146 Federal cost-sharing per owner on parcels in excess of 120 acres but up to 320 acres shall be reduced proportionately.

146 It is expected that Federal cost-share rates close to 100 percent may be necessary to obtain desired levels of participation because of the high cost of reclamation.

146 Decisions on this option will not be made until after public comment is received.

146 Final decisions on the program will be made on or about June 15, 1978.

146 7. Public Comment

146 Public comment was solicited via three public meetings meetings held in cooperation with the Office of Surface Mining in October of 1977. Also, five public meetings were held on March 8, 1978, to obtain public comment on proposed rules and regulations.

146 A program environmental assessment and public comments (on tape) are on file. Final rules and regulations and program environmental impact statement will respond to additional public comments.

146 The final impact analysis will be incorporated into the final program EIS.

147 Senator FORD. Thank you very much. I just have one question. I feel like I am letting you off easy. I was more interested in the other maybe than this. But what is being done to implement the prime farmland provisions?

147 Mr. BARRY. The prime farmland provisions, so far as the Soil Conservation Service is concerned, have been implemented primarily through the publication of a technical statement about, or a definition of, prime farmland as it applies to new mining activities. This is a highly technical definition.

147 We deal with it through our offices, field offices located - well, we have State offices, one in each [one] of the States where coal mining occurs, and a number of field offices. [And] We provide technical assistance to the State agencies and the coal mine operators who request it in terms of

interpretations of the prime farmland definition. We also provide soil surveys, where available, and names of soils that qualify as prime farmland.

147 Senator FORD. Did you have the prime farmland definition in place?

147 Mr. BARRY. Yes, sir. It has been published by the Department of the Interior, Federal Register, December 13, 1977, and by the Soil Conservation Service, Federal Register, January 31, 1978.

147 Senator FORD. Is that 4- or 5-page thing with single spaces that gets into all of the ramifications - I couldn't understand it. I had a hard time understanding lawyers around here, let alone when you get into all of this -

147 Mr. BARRY. Senator, I am not sure how many pages long it is. I believe it is -

147 Senator FORD. But several pages?

147 Mr. BARRY. Yes; it is. And it is a highly technical definition, one that I couldn't explain to you either, with my background.

147 Senator FORD. It is going to be hard to explain to some of those folks out there, too.

147 Mr. BARRY. Yes; but we have soil scientists in the area who can interpret that in semitechnical and laymen's technology.

147 Senator FORD. Senator Hansen, do you have any questions?

147 Senator HANSEN. Do you have any two experts who will agree on interpretation of this definition? I say this somewhat facetiously. I fear Senator Ford's dismay with that definition. We read it over and I couldn't understand it; I couldn't even pronounce half the words.

147 It seemed to me as though, while it might qualify technically as a definition, that it would have utility, I would suggest there aren't very many experts around who would have the competence to understand or interpret just what was meant.

147 I used to be a soil conservation supervisor at one time and it certainly got into a very technical area. Just let me say, Mr. Chairman, that I am delighted the SCS is involved in this effort. I was one who felt early on that you had a crucially important role, and I think your expertise certainly qualifies or merits the faith that I and others have in your ability to deliver the kind of help that will be meaningful. I am pleased to have your report. Thank you.

148 Senator FORD. Senator Melcher.

148 Senator MELCHER. I have no questions. Thank you very much, Mr. Barry.

148 Senator FORD.Senator McClure.

148 Senator McCLURE. I have no questions. But I would just like to suggest that the Department take a look at what the President has said recently about making the regulations understandable in laymen's terms. The President is new at the job, obviously, but he still has the hope that we can translate complex matters into terms so that they are understandable by the public. I think this is obvious that this definition is not understandable by the experts, let alone by the public.

148 Mr. BARRY. I appreciate your comments, Senator, and we will take a look at it. I might say that the definition does fit in with a national system of soil classification that was developed over quite a long period of time. My recollection goes back that we went through seven or eight approximations before finally coming to this, and scientists from all over the world participated in it. [And] The definition and the terms used come from Published Agricultural Handbooks.

148 So I would say that at least soil scientists understand these terms, and it has been developed with much research behind it. But we certainly will take a look at it from the standpoint of trying to simplify it.

148 Senator McCLURE. I understand that when you simplify it you also introduce more ambiguity. That is the reason we move in the direction we do, toward well-understood scientific terms. And I appreciate the fact that the SCS has over the years established and USDA has generally established some definitions, and have wide acceptance. But I suspect there is utility in using those accepted definitions and terminology. But it is very confusing to people who are not necessarily soil scientists. I appreciate your comment as well as your dilemma. Thank you.

148 Senator FORD. Mr. Barry, you got off easy. You had to wait a long time. Thank you very much. We appreciate your report and appreciate your answers. We will be in touch with you and look forward to working with you in the future.

148 Mr. BARRY. Thank you. It was a pleasure to be here.

148 Senator FORD. The next witness is Mr. Joel Snow, Associate Director of

the Office of Energy Research in the Department of Energy.

148 Mr. Snow, we are delighted to have you with us this morning, and we hope you will identify those at the table with you. Your statement is not very long. You can read it in its entirety or submit it for the record and highlight it if you wish. Usually, if it is a short statement and you ask if they want to highlight it, it takes longer to highlight than it does to read the statement. But you do whatever you want to this morning.

148 Mr. SNOW. Thank you very much, Mr. Chairman. On my left is Dr. Frank Farrell, who is the Director of the Office of University Activities, the program director for fossil energy in the Department of Energy.

149 On my right is Dr. Michael Biallas, who also works in that office, who works directly on the establishment of title VIII, the coal laboratories program.

149 To his right is Dr. Lawrence Stewart, who is Director of the Office of Education of the Department of Energy and the Assistant Secretary for Intergovernmental and Institutional Affairs.

149 And finally, to his right is Dr. James C. Kellett, who is the Director of the Division of Education Programs.

149 Senator FORD. You may proceed.

STATEMENT OF DR. JOEL A. SNOW, ASSOCIATE DIRECTOR, OFFICE OF ENERGY RESEARCH, DEPARTMENT OF ENERGY, ACCOMPANIED BY DR. MICHAEL J. BIALLAS, EXECUTIVE SECRETARY, TITLE VIII TASK FORCE; DR. LAWRENCE J. STEWART, DIRECTOR, OFFICE OF EDUCATION, BUSINESS AND LABOR AFFAIRS, ASSISTANT SECRETARY FOR INTERGOVERNMENTAL AND INSTITUTIONAL AFFAIRS; DR. JAMES C. KELLETT, DIRECTOR, DIVISION OF EDUCATION PROGRAMS, OFFICE OF EDUCATION, BUSINESS AND LABOR AFFAIRS; AND FRANK M. FARRELL, DIRECTOR, OFFICE OF UNIVERSITY ACTIVITIES, FOSSIL ENERGY PROGRAM, ENERGY TECHNOLOGY

149 Dr. SNOW. Mr. Chairman and members of the subcommittee, I am pleased at the opportunity to be here today to discuss the Energy Department's implementation of title VIII and of title IX of Public Law 95-87, the Surface Mining Control and Reclamation Act of 1977.

149 Title VIII authorizes the establishment and operation of ten university

coal research laboratories. Sections 901-907 of Title IX authorize the annual award of up to one thousand energy resource graduate fellowships.

149 The concept of establishing university coal laboratories (UCL) - mineral resources programs similar to existing university agricultural programs - arose in the early 1970's. In 1973, the substance of title VIII of the present act was introduced by Senator Hugh Scott of Pennsylvania - now retired, to be administered by the National Science Foundation. Various legislative proposals to establish mineral institutes or university mineral resources programs have been introduced in every Congress since 1970. The act authorizes four such programs:

149 First, State mining and mineral resources research institutes, title III;

149 Second, university coal research laboratories, title VIII;

149 Third, energy resource graduate fellowships, title IX, section 901-907; and

149 Fourth, research and demonstration projects of alternative coal mining technologies, title IX, section 908.

149 The title III program is to be handled by the Department of the Interior. The Department of Energy has responsibility for the other programs.

150 The Secretary of Energy is to designate 10 universities at which UCL's would be established and operated. In making these designations, the Secretary is required to consult with the National Academy of Engineering and to consider criteria specified in the act with regard to such matters as location, capacity, experience, and expertise,

150 Universities designated as UCL's would receive Federal financial assistance of up to \$4 million for laboratory construction, including initially movable equipment, and up to \$5 00,000 for new program startup expenses. In addition, each UCL would receive up to \$1 .5 million for annual operating expenses, but the Federal share of those operating expenses would not be more than 50 percent. The details of title VIII are well known to the committee. I won't repeat those. But I do understand there is an amendment to title VIII which would add 3 more university coal laboratories but funding only two-thirds of the level of the first 10.

150 The amendment is part of the proposed Public Utility Energy Policies

Act, a part of the administration's energy package still being considered by the Congress.

150 First, a task force has been set up to establish criteria for selection of the institutions to be designated as UCL's and to work with the National Academy of Engineering on selection procedures.

150 Second, a mailing list has been established for the purpose of distributing information bulletins regarding the UCL program.

150 Third, six regional public information meetings have been held to gather input from the coal community and to provide information to interested parties on program status.

150 Let me now turn to the energy resource graduate fellowships synthesized in title IX. Title IX authorizes up to 1,000 fellowships to be awarded to candidates for masters degrees, "in those areas of applied science and engineering that are related to the production, conservation, and utilization of fuels and energy." The title IX fellowship program is not included in the President's fiscal year 1979 budget request, since the present Department of Energy traineeship program addresses the same needs.

150 Training of professional manpower at the graduate level represents a long-term national investment. Involvement of the university community in national energy research and development is a shorterterm objective which may be advanced through training support.

150 There will certainly be a need for trained professionals in energy fields, both in research and development and as operators, for the foreseeable future. No definitive assessment of professional manpower needs in specific energy technologies now exists or is likely to be possible until a reasonably stable national energy policy is reached.

150 Our education programs division, under the Assistant Secretary for Intergovernmental and Institutional Relations, currently supports graduate traineeships in all energy fields, including conservation, solar, fossil, geothermal, fusion, nuclear engineering, environment and safety, and energy economics and management.

150 The fiscal year 1979 traineeship budget of \$1 million will provide for 134 traineeships, each with a value of \$7,400, including a stipend of \$3,900 and an institutional allowance of \$3,500.

151 Mr. Chairman, I should also address section 908 of the act which also addresses coordination and acceleration of studies, surveys, extechnologies, demonstration projects and training related to coal mining technologies, which

provides alternatives to surface disturbance and the health and safety aspects of such technologies.

151 The DOE fiscal year 1979 budget request includes budget authority of \$7 million for the conduct of this program.

151 Mr. Chairman, this concludes my statement. I will be glad, through the help of my colleagues, to answer any questions you and your subcommittee members may have.

151 Senator FORD. Thank you, Mr. Snow. Is there a requirement on the scholarships - in your paragraph for fiscal year 1979, you say \$1 million will provide for 134 traineeships, and you go into the value of the institutional allowance. Is there any requirement that they spend any time in this field as the result of receiving - this is, what, \$1 5,000. Is that annually? How long does that go? Is that just a traineeship for 1 year?

151 Dr. SNOW. That is correct.

151 Senator FORD. I know in the medical field, when you give a medical scholarship, they go into a rural area for at least 2 years. Is there any requirement that these trainees go into a certain field? Or maybe they don't like it and they decide to sell magazines or something.

151 Dr. SNOW. I will have to ask Dr. Stewart about that.

151 Dr. STEWART. No; there is no requirement as to the condition of receiving the funds that they go into any particular field. On the other hand, the guidelines for a particular program are intended to attract those people specifically for the purpose of studying those areas. It is intended that they go into that field but there is no requirement.

151 Senator FORD. As related to the coal labs, none of them have been designated at the moment. Is that correct?

151 Dr. SNOW. That is correct.

151 Senator FORD. When do you expect to start designating such labs?

151 Dr. SNOW. In accordance with the requirements of the act. The act specified a 90-day period after signing into law, allowing the Secretary of Energy to make a determination as to when proposals or applications would be received for such designation.

151 The determination was made. The eligibility period would begin the day that funds were appropriated specifically for that purpose by Congress. There

has been no appropriation for this program at this time. Applications will be received over a 60-day period commencing with the date of enactment of the appropriations.

151 Senator FORD. Mr. Snow, the act authorizes \$30 million for university coal labs for fiscal year 1979.

151 What was the funding level requested by the Department?

151 Dr. SNOW. No funds were requested for this program.

151 Senator FORD. This was something that was thrust upon them? You were carried through the door, kicking and screaming and saying no, I will not invest in this?

151 Dr. SNOW. I think it is true that originally we were not in favor of these aspects of legislation.

152 Senator FORD. They are in favor of it now, aren't they?

152 Dr. SNOW. We currently have a process underway in the Department to try to establish a specific answer to this question. It has not been entirely resolved. But the funds might be requested in a fiscal 1979 supplemental or the funds might be requested in the fiscal 1980 budget. It was determined at the time that the fiscal 1979 budget was in its final stages of consideration. It was determined at that time that the justification brought forth for this program was insufficient.

152 Senator FORD. Was insufficient?

152 Dr. SNOW. Was insufficient; that is correct.

152 Senator FORD. Aren't there some pretty decent programs being carried on by certain States and certain universities with a little help, that we might be able to find new procedures, new reclamation, new ways to serve the coal and other items? This is a broad base. You have solar, nuclear, and other questions.

152 Would you think a little help in those areas to the universities is not something we ought to be doing?

152 Dr. SNOW. Yes, sir, and there hardly is a fairly substantial program in support of universities for individual projects grants. I think Mr. Farrell could give more detail on that.

152 Senator FORD. I have about nine questions as relates to this program, and I will not ask both of you today, but I will submit those for the record and ask that, within the next week or 10 days that you respond in writing, so it may be included in the record. And it goes into the authorization, implementation, the grants as prescribed by law. I think it would be very beneficial to the committee and those who are interested if these questions could be answered, Mr. Snow, and submitted for the record. I have no further questions.

152 Senator McClure.

152 Senator McCLURE. Only this question. You have indicated that title III is to be administered by the Department of the Interior.

152 What steps are being taken to coordinate the actions of the title III administration with the other titles of the act since the administration has decided to separate -

152 Mr. FARRELL. Senator, a part of the fossil energy program today is made up of a group that moved over from the Department of the Interior last October. They are in frequent contact with the Department of the Interior in coordinating these portions of the act, the part that is now in the Department of Energy, since it came over last fall - is having specifically section 908.

152 While I am not a part of that division, I can say from observation that they do cooperate on both of these programs. If there are more specific questions that you have, I would ask that they be allowed to submit them for the record - I mean the answers to them.

152 Senator McCLURE. I am thinking primarily of the fact that the State Mining and Mineral Resources Institutes have broad mandates and, apparently, DOE - well, the administration has recognized that the mandate for the institutes is somewhat different than the narrower function mandated under the other three titles.

152 But there is some overlap despite the fact that one is a broad mandate and the other three are specific mandates. Is it the thinking of the administration that there must be a careful relationship to determine that there be no duplication of effort or do you believe that these broad mandates under title III should be unrestricted and supplemented by the other three titles?

153 Dr. SNOW. I don't think this point has been addressed with quite

the specificity that you asked the question, Senator. I think I can say with some confidence that the problem of dealing with overlaps and potential overlaps and duplications in several programs is something to take very seriously. It is highly likely that the institutions in many cases of the good candidates - the major centers might also be good candidates for having coal research laboratories.

153 So it is very clear that we would have to take that possibility into account in selecting institutions for coal laboratories.

153 Also, I think it is self evident that the substance of these programs would have to be carefully coordinated with the other efforts, particularly in such areas as subsurface mining, and so forth.

153 Senator McCLURE. I think they could be very closely related, and I think they can supplement each other. I can foresee the likelihood that a Mineral Resources Research Institute, supported under title III, will also be seeking the same institution, be seeking full research laboratories under title VII to supplement the action that they are taking under title III and at the same time under title IX the same personnel would be seeking graduate fellowships, at the same time also seeking, under section 908, grants to do some other portion of their work. That sometimes is justifiable. I think you can put together a composite request for funding that allows the job to get done more efficiently than if you parcel it out in little pieces so that nobody gets anything done.

153 At the same time, it is also quite possible that one institute or institution could run off with large sums of money, limited portions of it under each title, without anyone having aggregated the total. And it is difficult to determine how you coordinate the activities.

153 But when the administration is divided, as it is, one portion under Department of the Interior and the other portions under the Department of Energy, that difficulty in coordination may become greater.

153 You have a similar problem with grants made under the National Science Foundation because they can get grants to do precisely the things that are being done in each of these four titles. I want to see the Institutes with a maximum amount of independence under title III. I don't think it is intended that we use Federal funding to direct exactly what they do, except that it has got to be within the mineral resources area. But that certainly overlaps with the other

titles which you have the responsibility to administer. I don't know that there is any perfect answer, but I was just wondering to what extent you have already run into that problem or taken steps to make certain that the coordination is both adequate and appropriate.

153 Dr. SNOW. Well, Senator, I believe it to be the case that we have not gotten far enough into the selection process to determine whether the existence of another activity such as the title III activity under the act or perhaps the activity supported directly by the State should have a direct bearing on the selection of the individual coal laboratory.

154 However, the act does require, in designating these laboratories, the institution of higher education, if considered, must have the capacity to establish and operate the coal laboratory. So, to some degree, we must take into account the existing capability of the institution.

154 If only a limited number of institutions have major capability at the present time in coal research and these also tend to have strong programs generally. So it is likely the same relatively limited list of institutions would be candidates for support under this program. Obviously, the coordination would have to be very close between the different aspects of the institutions funded under this act. But, in addition, we must be concerned with the potential of overlap between these programs and those funded under the Department of Energy - as I mentioned, substantial programs in support of the university projects are already underway and substantial programs at the energy research centers that are essentially in-house laboratories at the Department of Energy. So we must strive to insure that we don't have a lot of duplication in all of those areas.

154 I believe I can submit that we will work very hard to do that.

154 Senator McCLURE. I would like to have a little bit - if you would like to follow up with written comment. I would also welcome any suggestions that you might make as to what we can do from the standpoint of Congress if, indeed, there should be any changes of law or coordination of appropriations activities related to that effort.

154 I also would note that, under title IX - you have title IX authorized up to 1,000 fellowships, and you suggested that 134 traineeships meets the need, at least that is the way I read your statement.

154 Am I correct?

154 Dr. SNOW. That is what it says, Senator.

154 Senator McCLURE. I would hope that I recognized you don't write the Federal budget by yourself. But I would hope that somebody would note that Congress in the development of minerals policy has noted repeatedly the lack of advanced training being undertaken in universities across the land and particularly in the minerals resources research. That is one of the reasons we wrote into the act the target for 1,000. That is one of the reasons we have repeatedly insisted on Mineral Resources Research Institutes, and this administration and the last two administrations resisted that effort. OMB hasn't changed.

154 Presidents come and Presidents go, but OMB stays on forever. And we haven't apparently gotten through yet. At least the congressional feeling that if we are going to meet the need over the next 10 or 15 or 20 years, we have to be expanding the work that is being done in our universities, preparing the young men and young women for careers in these fields.

154 It doesn't seem to me that to say that 134 internships comes very close to meeting the goals established by the Congress in this particular area. I would hope that somehow we can get that feeling of urgency communicated to the administration, generally, and to OMB in particular.

154 I know again you don't write the budget by yourself. But there is a serious problem. We are facing a materials crisis in this country and a minerals crisis in this country. That is every bit as potentially severe as the energy crisis.

155 In 15 or 20 years from now we are going to wake up to that belatedly and say why didn't somebody do something about it. Congress has been trying to get something done about that by making certain that people are trained so that they can be in place, working on these problems, prior to the time the crisis erupts in the public view and the Congress then can manage the crisis which is then real.

155 Thank you very much for your testimony. I hope we can get a little better focus on that program.

155 Dr. SNOW. Well, Senato, as to the whole question of training, first, the Department of Energy's fossil energy program supports research at universities to the tune of approximately \$30 million a year.

155 This supports professors but it also supports a number of graduate

students who work as research assistants under the research programs. While I don't have the exact figures in hand, this provides support for several hundred additional students, although the numbers don't show up precisely the same way. As you are concerned, I am further saying that responsibility given by statute to the Office of Energy and Research includes an overview of the education training activities of the Department.

155 One area which I know my superior, the director of the office, wants to look over very carefully is this whole area of education and training and the potential need for graduate students. We feel that a program of roughly \$1 million is inadequate if there is a real problem, and if there is not a real problem the program should not exist. We have not done the definitive studies that would pin down the manpower requirements of the future adequately enough so that we could justify the program at a larger amount. We do hope to undertake such studies during this coming year, and we hope we will be able to relate the specific need for manpower to the overall program and the national energy plan as it will by then have been enacted by the Congress.

155 Senator McCLURE. That is one of the difficulties we have from this standpoint; that is that many of those studies have been made in the past and I suspect that the study you will make now is to pull off the shelf a great many of the ones that have already been made, dust them off and read them again and determine whether sometime a year from now you can determine whether or not you agree with all the studies that have made in the past.

155 Congress has already gone through that exercise, and we have gone through it repeatedly, and they have concluded that we need this program. I recognize the fact that you may desire to take a fresh look at it. But you suggested that it will be a year before you can determine whether the judgment the Congress has already made is a good judgment.

155 That gets a little frustrating to those of us who up here worked for years to get something done. You finally get it done, and then you get a new batch of people downtown who want to study it all new, like do we invent the wheel. I am satisfied the need exists. I am satisfied on the basis of a lot of studies that have been made over a lot of years, and I recognize that you may not have studied those yet. That is a dilemma we face when we have new people across the table from us who won't just accept our word for something.

156 I recognize that you demand the right to make up your own mind, but

some time we have to make decisions, instead of endlessly studying something that has been studied ad nauseam.

156 We consume more energy in this country studying than we do in producing, and we perhaps do the same thing in our budgets. I hope you will expedite that, and I trust when you do - you look like an intelligent man and you act like an intelligent man. I assume then you will agree with me when you have had the chance to study it.

156 Senator FORD. Senator Melcher.

156 Senator MELCHER. Dr. Snow and my assistant secretary, Joan Davenport were here. We went over with her how they arrived at the location of these regional district headquarters, the regional headquarters and district headquarters locations. Her answer was that we have to go to the regional area that is identified on a national basis. Denver is a regional center. We will put it in Denver. It doesn't have much to do with coal but put it in Denver.

156 Now, those regions of course were set up by the Federal Government to administer programs, most of which were based on population and what-have-you. If it is a HUD program, fine, that may make some sense; or if it is something to do with so many agencies that deal with people problems individually, who can quarrel with that.

156 But when you come down to a technical responsibility dealing with certain commodities such as coal, it seems to me you ought to know where the coal is. That ought to be the long-range goal, and I hope we can see some change in that.

156 Now, we come to your part of this in getting into title VIII. And this has to do with institutions of higher education who are going to get some funds: coal research laboratories, university coal research laboratories. The criteria is not geared to any interpretation of population. The criteria is geared to the resource involved, namely coal. One of those is that the institution of higher education now be located in a State with abundant coal reserves.

156 My question to you, Dr. Snow, is: What does your legal adviser tell you abundant coal reserves mean?

156 Dr. SNOW. Senator, to my knowledge, we don't have the definition of "abundant coal reserves" provided by the legal staff. I feel that the rule of good commonsense would hold here. The Bureau of Mines set up coal provinces through some parts of some States, as you are aware. I am quite sure that, in

making such designations, it would be highly unlikely if any institution would be designated if there wasn't plenty of coal there.

156 Senator MELCHER. That is just as vague an answer as the term was. But I would point out that it is coal reserves. Would you think that the State that had the greatest amount of coal reserves would be one of 10 and would be so designated?

156 Senator FORD. I would ask you to be very careful in the way you answer his question.

157 Dr. SNOW. I don't have any listing that it gives the reserves by State. I am unable to give a definitive response to that question, Senator. But I can certainly think that any State that has a substantial coal reserve will certainly be a strong competitor because that is the way the act is written, and that is the pattern that we have to follow.

157 As you are aware, the Department of Energy has energy research centers which are geographically dispersed and that relates quite closely to coal resources such as the Laramie Research Center, for example.

157 Senator MELCHER. Such as which?

157 Dr. SNOW. The Laramie Research Center as an example.

157 Senator MELCHER. Laramie. Well, we are getting close.

157 Dr. SNOW. I think we should be able to develop a very adequate distribution of these institutions where both the coal is and the capability is. That is the intention of the act.

157 Senator MELCHER. I hope I can just address one point to all five of you, and that is this: This point was put into the act to get away from the idea that the greatest advantages for this type of operation, this type of assistance for a coal laboratory, would be necessarily in the East. We have no quarrel about the tremendous contribution of the older, better established, better endowed, better financed, Eastern universities in research of all kinds.

157 But we are also very much aware that where we come from we have some specific problems that are going to have to be faced with development of the greatest amount of coal we have in the United States, in the Powder River Basin, and we are looking at it not as something that is going to be done in the next 10 years; we are looking at something that is going to be done during the next 60 or 70 years.

157 The basic questions that are not understood at this time that are

involved in the mining of that coal - this title is not specifically drafted for those problems. But we think it was drafted to include those specific problems.

157 I just hope that when you are looking at the universities that will comply with this, that you bear in mind that we do have some specific problems we would like to see addressed. We don't think there is going to be a contract let for a couple of years to solve the problem. We think this is going to be a long-range learning process during the next - at least during the next 25 years. Until we answer some of those questions, a lot of the reserves that are there won't be mined. So it is a very practical suggestion to locate some of these university coal laboratories in the West.

157 Senator FORD. Thank you very much, Dr. Snow. That concludes our questions of you and your group. I think you can see by the questions and answers from the committee that we are looking at this area and it is important to us. We hope that you will take the word of Senator McClure that the studies have been made, and we are very hopeful that we won't have to have any more studies.

157 Just from the information at hand, you could go ahead and proceed without having another study and delaying that much longer.

157 Dr. SNOW. Thank you, Senator.

157 [Subsequent to the hearing, the Department of Energy supplied the following:]

158 Question 1. In P.L. 95-87 Congress authorized \$30,000,000 for fiscal year 1979 and \$7,500,000 for each fiscal year thereafter until 1983 for coal research grants. To my knowledge the Department of Energy has not requested an appropriation regarding these coal research grants. Would you explain the reasons for the delay? Is there a problem with DOE or is there some other agency, such as OMB, which is causing the delay?

158 Answer 1. Public Law 95-87 was signed into law on August 3, 1977, late in the Fiscal Year 1979 budget and planning cycle following the assignment of responsibility for implementation of Title VIII to the Fossil Energy Program. A proposal to request additional funds for this program was sent forward within DOE on October 28, 1977. The request was denied due to a lack of sufficiently strong supporting justification. Additional staff efforts have been undertaken to provide a more effective rationale for this program. The DOE must consider this program within the context of other related research carried out by the

national laboratories, the Energy Research Centers, universities, and private industry, and in view of overall budget constraints. An internal decision as to whether or when to request funds for this program is expected shortly. The OMB has not, at present, been asked to consider a request for funding of the university coal laboratories.

158 Question 2. Certainly Congress showed its intent to implement these coal research grants by their inclusion in P.L. 95-87, and this was affirmed by the President's signature when he signed the bill. Has there been any change within the Administration? Should such research projects not be implemented, and, if so, why?

158 Answer 2. Please see answer to question 1. The possibility of a funding request to implement Title VIII is presently under study, including the possibility of an initial program at a reduced level of effort.

158 Question 3. Since these grants are prescribed by law, we must assume that DOE is attempting to implement them soon. Would you explain your timetable regarding the implementation of this program within the Administration?

158 Answer 3. As indicated in the answers to the foregoing questions, the DOE is presently studying options for the implementation of Title VIII. These could include FY 1979 funding through a budget amendment or supplemental request, or FY 1980 funding in the normal course of the budget cycle. If funds are requested and appropriated, a competition period for receipt and evaluation of proposals has been established in the 90-day period after funds become available. Until then, the selection guidelines are being formulated with the assistance of the National Academy of Engineering. Close contact will be maintained with Congress while the budget bill containing funds for this program is acted upon so that interested institutions have sufficient time to prepare their strongest possible presentation.

158 Question 4. Is there any other agency within the Administration which has any input or decision-making power regarding the implementation of the coal research programs?

158 Answer 4. Close contact with the Department of Interior will be maintained to assure that coordination with the Mineral Resources Institutes program will take place. In addition, contact will be maintained with the Office of Science and Technology Policy in the Executive Office of the President and with the National Science Foundation, each of which is concerned with research and education in science and engineering.

158 Question 5. Can you give us an idea as to the standards and methods you would use in determining the colleges and universities to be chosen to conduct the necessary research?

158 Answer 5. Plans for the evaluation of the applications of the institutions include the examination of the applications by a "blue ribbon" panel of experts knowledgeable in the field of coal research and familiar with the performance of research in academic institutions. These experts will represent a cross section of interests - Government, industry, and academic institutions. If time allows, site visits to the prospective institutions will be made to gain firsthand experience with the ongoing programs of the institutions.

158 Question 6. What criteria will you use to accept and/or reject a university which applies for such a grant?

159 Answer 6. The qualification criteria will contain the several items specifically mentioned in the statute, namely that (a) the institution is to be located in a state with abundant coal reserves, (b) that the institution is to be experienced in coal research, and (c) that the institution has the capability of establishing and operating the laboratory. In addition, secondary criteria will be established by the Department of Energy Title VIII Task Force, in consultation with the National Academy of Engineering.

159 Question 7. In what stage are the guidelines, if any, which you are writing regarding this program? When do you expect to make these guidelines public?

159 Answer 7. The input from the public information meetings has been assembled in draft form and will be sent to the attendees of the meetings and to other individuals on our mailing list for further comments and suggestions prior to drafting the program guidelines. Simultaneously, an ad hoc committee of the National Academy of Engineering will hold meetings to recommend guidelines. The combination of these two activities will result in a concrete set of guidelines to be written by the end of the 1978 fiscal year. These guidelines will be made public in time to provide ample opportunity for them to be considered by proposers should the program be implemented.

159 Question 8. It appears that this program would be of the utmost importance to the Administration in that increased utilization and production of coal is an integral part of the President's energy program. There certainly are numerous institutions which have knowledge regarding the development of these

coal resources. Would it not be feasible to allow a group of colleges and universities within a large coal-producing area to coordinate coal research under one research grant?

159 Answer 8. The Department of Energy considers it feasible for a group of institutions in one coal province to submit a joint proposal to operate one of the University Coal Labs. This approach has been encouraged, and a number of schools in various provinces have carried this concept forward.

159 Question 9. To have any useful research it would appear that the results of any research should be able to be used commercially. In other words, should there not be a commercial value behind any coal research program? Therefore, it would appear reasonable that the universities and colleges should work closely with the commercial users and producers of coal. What are your thoughts with regard to universities working closely with the commercial sector?

159 Answer 9. The Department of Energy is aware that the UCL interaction with industry is mentioned explicitly in two places in Public Law 95-87. This was interpreted to mean that close contact with industry by the UCL's is to be the norm. Furthermore, as part of the program development process, the Department is planning to hold a meeting of coal producers and users, similar to the previous regional meetings, to gather input from the industrial sector so that its recommendations for insuring timeliness in research programs and training of students may be used in the management of the program.

159 Question 10. Increased coal production is a very prominent part of the National Energy Plan proposed by President Carter. His proposed energy legislation has made this point quite clear.

159 The creation of your agency - the new Department of Energy - was based upon the need to closely coordinate the energy legislative and regulative efforts of the entire Federal Government.

159 Although I realize that the Department of the Interior and not DOE has primary responsibility for the implementation of the Surface Mining Act, I am curious about your Agency's role in the preparation of the Surface Mining Regulations:

159 Has DOE participated in the Interim Regulatory Program?

159 How?

159 At what point in time did your Agency begin to have input?

159 Approximately how many hours have been spent by the Department of Energy personnel in this effort? (provide for the Record).

159 Have you submitted any written proposals or comments to OSM with regard to this new regulatory program? If so, would you please provide copies of these proposals for the Record?

159 Had DOE prepared any assessment of the projected impact of the Interim Surface Mining Regulations on our National Energy Policy? For example has DOE independently examined whether or not these regulations will significantly impact on our stated goal of 1.2 billion tons of coal production by 1985?

160 Does DOE intend to play any role in the preparation of the Permanent Surface Mining Regs which are to be promulgated by August 3, 1978?

160 Answer 10. The development of the Interim Surface Mining Regulations was done by working groups assembled by the Department of the Interior. Participants included people from CEQ, DOE and EPA but no ERDA (at that time) people were included. The Office of Surface Mining Reclamation and Enforcement (OSMRE) Task Force was set up and headed by Paul Reeves, DOE. The Proposed Implementation Provisions for Surface Mining Reclamation and Enforcement appeared in the Federal Register on September 7, 1977. DOE submitted comments on those regulations on October 13, 1977. On December 6, 1977, a letter was sent to Alvin Alm, Assistant Secretary for Policy and Evaluation, DOE, from Walter Heine, Director of OSMRE acknowledging receipt of the DOE comments.

160 The next interaction with OSMRE was at DOE's initiation. A letter signed jointly by James Speyer, Policy and Evaluation, George Sall, Energy Technology, and Ted Williams, Environment and Safety, was sent to Walter Heine on March 17, 1978, requesting cooperation and offering DOE's assistance in implementing these Surface Mining Regulations. A meeting with Mr. Heine and his staff was also requested to discuss DOE concerns and DOE assistance in the development of the permanent regulations.

160 To date that has been the extent of DOE's participation in the preparation of these regulations. DOE was not invited to participate in the development of the interim regulations or the permanent regulations. Our first involvement was being asked to comment on the Interim Regulations after they were published in the Federal Register.

160 James Speyer of the Office of the Assistant Secretary for Policy and Evaluation has played a direct role in DOE's participation in these regulations

and in developing our supply projections. He has stated that these regulations have been taken into consideration in setting our coal production goals.

160 The DOE individuals attending the May 10 meeting will become heavily involved beginning in June with the review and comment on the draft permanent regulations and then the preparation of the Environmental Impact Statement and the regulatory analysis.

160 The exact amount of staff time which has been devoted to these activities is difficult to estimate precisely but would be approximately 100 man-hours.

160 Senator FORD. The next witness this morning - we are about to run out of time, and I regret that - the Council on Environmental Quality, the acting senior staff member for the land and natural resources, Mr. Robert Smythe. We only have 1 or 2 minutes and, hopefully, we can get to all of our questions.

160 Would you mind identifying this gentleman with you this morning, and you can proceed with your report and make your statement which we will include in the record, highlight it, or you can read your whole statement. It is a very short one.

STATEMENT OF ROBERT SMYTHE, ACTING SENIOR STAFF MEMBER FOR LAND AND NATURAL RESOURCES, COUNCIL ON ENVIRONMENTAL QUALITY, ACCOMPANIED BY DR. ERIK RIFKIN, COUNCIL ON ENVIRONMENTAL QUALITY

160 Mr. SMYTHE. Thank you, Senator. As you indicated, we do have a brief progress report that we have submitted for the record. I will not read it into the record but add to it where I think it will be useful.

160 I am Robert Smythe. As you indicated, I am acting senior staff member for land and natural resources, at the Council on Environmental Quality. I handle environmental issues related to natural resources.

161 The gentleman on my left is Dr. Erik Rifkin, who is working at the Council with me on this particular study which you have asked us to report on today. As you know, section 709 of the act of Public Law 95-87 directed the Council to conduct a study of surface and open pit mining and reclamation technologies for minerals other than coal. The Council has contracted with the National Academy of Sciences to carry out this in-depth study.

161 The results of the Academy's study, as prescribed by the law, will assist us in determining the degree to which the requirements of the act can be met by current and developing technology. We will identify areas where the requirements of the act cannot be met by current or developing technology, and in those instances will describe requirements most comparable to those in the

act and the costs involved. The study will also discuss alternative regulatory or other mechanisms designed to secure the achievement of most beneficial land use for areas affected by surface and open pit mining.

161 The Council has been working with the National Academy of Sciences from the enactment of this act to develop and design the study. We have in the process paid particular attention to obtaining participation of various interest groups, Government agencies and institutions, State and Federal, industry representatives and environmental organizations, and members of the public.

161 We have contracted with the Academy as I indicated - the contract began on April 1 and will go for 16 months. There will be three reports as a part of the study submitted to CEQ. There will be a preliminary report on oil shale and tar sands delivered to the Council by March 31, 1979. There will be a report on that aspect of the study that relates to open pit mining for sand and gravel. It will be delivered to the Council by that same date. The final report, encompassing all of the areas studied, will be delivered to us by July 31, 1979. The Council then by law will present specific legislative recommendations to the President and Congress. We expect to complete those by September 30 of that year.

161 I think there are perhaps a couple of items that I will emphasize and see if you have any additional questions about this study. As I indicated, we have tried to involve a number of different interest groups in the development of the Academy's study.

161 The Academy is in the process of selecting a committee of experts to direct their execution of the study; that committee will be chaired by Dr. James Boyd who is a distinguished geologist and mining engineer with many years experience in industry and with the Federal Government.

161 The committee, which the Academy selects, will in turn design the details of this study. They will be expected to establish a series of panels of experts to deal with the subelements of the study. The panelists will contact individuals and organizations throughout the country where various minerals are mined. They will probably travel extensively to visit sites where mining and reclamation of minerals other than coal is taking place.

161 The Council has attempted to assist the Academy, as I said, both in the design and in the execution of this study by providing for what we think is

constructive input from various groups. We have also attempted to develop on our own information on related activities and studies being conducted by the Federal Government so that we can make maximum use of those other studies and the Academy also can. These include the nonfuel minerals policy study that is being undertaken now by the Department of the Interior, additional activities of the U.S. Geological Survey, the Office of Surface Mining, and activities of other Federal, State, and local governments.

162 We have arranged meetings to date with the Council and representatives of the Academy. We have met, for example, with members of the Interstate Mining Compact Commission, the American Mining Congress, the National Wildlife Federation, the National Sand and Gravel Association, the Environmental Policy Center, and other individuals and organizations.

162 I think that, rather than going to any further detail, I will just see if you have any questions about the progress of the study today.

162 [The document referred to follows:]

162 EXECUTIVE OFFICE OF THE PRESIDENT, COUNCIL ON ENVIRONMENTAL QUALITY - PROGRESS REPORT ON NAS SURFACE MINING STUDY

162 The Council on Environmental Quality has contracted with the National Academy of Sciences to perform a \$4 50,000, 16-month in-depth study of Surface and Open Pit Mining and Reclamation Technologies for Minerals Other than Coal. This study, which began April 1, 1978, is required by the Surface Mining Control and Reclamation Act of 1977 (Section 709, P.L. 95-87). The Council will prepare specific legislative recommendations, based on the results of the Academy study to be submitted to the President and the Congress.

162 The results of the Academy study will:

162 (1) Assess the degree to which the requirements of the Surface Mining Control and Reclamation Act of 1977 can be met by such technology and the costs involved;

162 (2) Identify areas where the requirements of the Surface Mining Control and Reclamation Act of 1977 cannot be met by current and developing technology;

162 (3) In those instances describe requirements most comparable to those of the Surface Mining Control and Reclamation Act of 1977 which could be met, the

costs involved, and the differences in reclamation results between these requirements and those of this Act; and

162 (4) Discuss alternative regulatory or other mechanisms designed to insure the achievement of the most beneficial postmining land use for areas affected by surface and open pit mining.

162 Specific actions taken to date or currently in progress are summarized as follows:

162 A. The Council and the Academy are actively seeking the participation of government agencies and institutions (Congress, Federal, state, regional and local), industry and the public and will consider the concerns and comments of these organizations and persons. The active involvement of individuals and organizations during the planning and development of this study will assist the government in establishing effective and reasonable regulation of surface and open pit mining and reclamation for minerals other than coal. To date, the Council and the Academy have had the opportunity to meet with and receive comments from individuals representing a number of interested organizations. These include the Interstate Mining Compact Commission, American Mining Congress, National Wildlife Federation, Conservation Foundation, National Sand and Gravel Association, Environmental Policy Center, Environmental Policy Institute and staff from the Senate Energy and Natural Resources Committee. In addition, we have received and responded to concerns related to this study from other local, state, Federal and industrial interests.

162 B. The National Academy of Sciences is in the process of selecting a Committee, to be chaired by Dr. James Boyd, comprised of experts from such relevant fields as mining engineering, hydrology, agronomy, land use, landscape architecture, economics, ecology, botany, regulatory law, geology, and geochemistry, to participate in this study. The Committee, in turn, will organize panels to investigate current and developing technology for mining other than coal. The panels will study the effects of mining and reclamation operations on the environment, including impacts on the land, air and water.

163 C. A federal inter-agency advisory group is being formed by CEQ and will assist the NAS in:

163 (1) Identifying existing related studies,

163 (2) Identifying existing and developing technologies for minerals other than coal,

163 (3) Selecting commodities for in-depth study,

163 (4) Recommending mining and/or reclamation activities for site visits,

163 (5) Interpreting the requirements of the Surface Mining and Reclamation Act of 1977.

163 (6) Determining the availability of existing base-line data and defining areas where there is an insufficient data base.

163 D. During the course of the in-depth 16 month study which the NAS is conducting for the Council, Academy and Council representatives will visit mining and reclamation sites in order to examine current practices and the environmental implications of mining and reclamation operations on specific geographic areas. The information obtained during these site visits will assist the Academy's interdisciplinary Committee in its analysis and evaluation of reclamation standards for surface mining of minerals other than coal. The Academy and the Council have asked for and received information on mining and reclamation sites where there are currently valuable existing base-line data.

163 The preparation of specific legislative recommendations will require the Council to develop a clear understanding of the requirements applicable to coal in the Surface Mining Control and Reclamation Act of 1977, and the suitability of these requirements to different commodities and eco-systems. In order to facilitate this process, the Council and the Academy continue to encourage concerned, experienced and knowledgeable interests to become active participants in this study.

163 Senator FORD. Mr. Smythe, it appears that you are moving along on schedule and that you are pulling together a distinguished group headed by a very distinguished individual. And you are, in your scope of operations, developing technology for minerals other than coal. You are not getting into the arena of coal as such.

163 Is that true?

163 Mr. SMYTHE. That is true. We understand that Congress intended through this study to see whether the type of regulations that have been developed and will be developed for coal are applicable to other minerals, but they did not set up those regulations in the law; rather, it was the intention that a detailed study be done and recommendations be made to the President through Congress on what would be appropriate legislative course of action, relating to those other minerals.

163 Senator FORD. Do you have any other indication as to the relationship of surface - as it relates to coal or as it relates to, say, sand, gravel, limestone?

163 In my area, our sand and gravel comes from the roofer, and that becomes a different problem from where you have the big barges and you have machines to suck the sand up off the bottom of the rivers into gravel pits. You have areas that we call red dog. I don't know whether you are familiar with red dog or not, but red dog is a sand that is used, that comes out of the Appalachia. We are lucky to have that. It is a hard stone and gravel; it is a combination and it is packed pretty good.

164 How much disturbance of the surface is there in the area which you are going to study or are studying?

164 Mr. SMYTHE. There is considerable surface disturbance for some kinds of mining for some types of commodities. The question brings to mind a point that I wanted to make.

164 The mining of a specific commodity such as, say, sand or gravel, has varying environmental impacts, depending on the technique used, the geographic location of the country, or the lay of the land in relationship to the subsurface hydrology.

164 The point is that there are a wide range of impacts even when one commodity is selected to focus on. And we have discussed this problem with the Academy in designing their study. It is my understanding that they will organize a study focus on the types of environmental disturbances that result from various commodities rather than organize on a commodity-by-commodity basis.

164 If they were to do the latter, they would end up duplicating a lot of the work of the study because the impacts of mining sand and gravel in a certain way may be very similar to the impacts of mining limestone in some part of the country; and in another part of the country the way limestone is mined versus the way sand and gravel are mined is very different. So we are looking at these impacts on an environmental basis rather than on a commodity basis.

164 Senator FORD. I suspect you are going to find that about 150 - or 50 different ways in 50 different States as relating to severing sand, gravel, limestone, et cetera. I think the point has been made by the people who have been here today that there is a vast difference between Appalachia, for instance, and the Western Plains, the type of coal, the way of severing the coal.

164 I suspect that getting into sand and gravel, as I said, red dog, comes out of the Appalachians, and if you have one of those things on your land it is

almost as valuable as coal. So there is a similarity between the stripping of coal or surface-mined coal and surfacing mining of this type of material used in the construction of roads. So there will be some overlapping. I have no further questions.

164 Senator McClure.

164 Senator McCLURE. Thank you, Mr. Chairman. The section of the statute for which you are submitting a progress report is the result of the inability of the Congress to come to grips with the possibility of dealing with mining as a method rather than as a commodity recovered.

164 I urged that at every stage of this proceedings that we should be looking at the method of mining rather than the commodity that came out of the hole in the ground because the methodology and the environmental impacts will be more similar based upon method than they would be on mineral recovered.

164 We are now looking at a report that was just designed to see whether that thesis was correct and to develop some possible alternative, regulations or suggestions. If it was a matter of fact, your thesis is incorrect.

164 I am quite concerned, however, with a couple of implications in your statement. The bill indicates that the law that was passed by Congress recognized that we have two critical priorities to meet in this field. One was the energy priority which some felt had to be addressed by looking at the recovery of tar sands.

165 That was recognized by the specific requirement that the report begin 12 months from the date of enactment. The 12 months will be up in August of this year. The other was the recognition that by far industry is sand and gravel, that in total areas disturbed in the United States as well as the distribution across the United States, sand and gravel recovery operations exceed the potential of coal strip mining. That is one thing that most people forget.

165 There is a tendency then they have tended to focus on potential environmental problems of coal mining but have not focused on the real present environmental consequences of sand and gravel operations. That was recognized by the Congress in its provision also by again requiring a report by the end of 12 months from the date of enactment. That also expires in August of this year.

165 I see nothing in your statement that indicates that we are going to have

any kind of recommendations by August of this year.

165 Am I correct in making that assumption?

165 Mr. SMYTHE. Yes, Senator, you are. That raises the problem which resulted after enactment of the act because, although the act authorizes appropriations for the study, no separate appropriation was made. The funds to undertake the study were provided from existing appropriations, by the Council on Environmental Quality and the Environmental Protection Agency through an interagency agreement which took some time to develop.

165 Senator McCLURE. As I recall, the Congress anticipated that problem by saying that we expected the administration to get the money for those studies out of the funds already appropriated.

165 Am I not correct?

165 Mr. SMYTHE. That was not stated in the act. That in fact was what happened.

165 Senator McCLURE. There was a provision in subsection C of 709 that no new budget authority is authorized to be appropriated for fiscal year 1977.

165 Mr. SMYTHE. OK, I understand what you mean. Yes; you are correct. There was no new budget authority anticipated or authorized by the Act for fiscal year 1977.

165 Senator McCLURE. But there was an authorization of \$5 00,000 which expected will be made available for 1978.

165 Are you telling me that the administration, because of those provisions, did nothing at all during fiscal 1977?

165 Mr. SMYTHE. That is correct.

165 Senator McCLURE. So the administration had no priority on meeting that timetable that would have reprogramed any moneys during fiscal 1977.

165 Mr. SMYTHE. That is correct. That was not done nor was there a request for a separate appropriation for fiscal year 1978. The arrangement that was made through negotiation between CEQ and the Office of Management and Budget was that we would seek funding in the two stages, one for fiscal year 1978 and those funds have now become available and have been transferred to the Council for the first year's phase of the study. Additional funds will be sought, I assume, in a similar way when the fiscal year 1979 begins.

166 Senator McCLURE. When was that money made available to CEQ?

166 Mr. SMYTHE. We finally obtained, after considerable negotiation, a signed interagency agreement on March 29 of this year. On March 31 we completed preparation of a contract for execution by the Academy.

166 Senator McCLURE. You know, that is almost incredible to me when the administration has set such high public goals for environmental concerns that, from August of last year until the end of March this year, they did absolutely nothing to implement a study that had the kind of implications that this has.

166 Mr. SMYTHE. I will disagree with you somewhat, Senator. It was not that they did nothing, but the decision that was made in the fall of 1977 when fiscal year 1978 began was that there would be no separate appropriation request for this study. Therefore, that necessitated a rather involved series of negotiations to obtain the money by transfer from another Federal agency.

166 Senator McCLURE. I shouldn't have said "nothing." I realize that it requires an awful lot of energy to move bureaucratic wheels. So I will give you full credit for that bureaucratic effort.

166 Mr. SMYTHE. That is, I am afraid, what it was.

166 Senator McCLURE. I am afraid so, and I am distressed because it also sounds like, in spite of the fact that Congress mandated specific dates for a study, there is no intention on the part of the administration to meet those specific, mandated dates.

166 Mr. SMYTHE. The problem we were faced with, Senator, was that the study as prescribed by law is an in-depth study. It does require many months of field studies and analysis. It was felt that if we were faced with either truncating the study to meet the deadline or extending the deadline but providing you with the kind of in-depth study that you asked for, we would have to do the latter.

166 We have worked with the Academy in advance of actually signing this contract, and they were well aware of our views and have made considerable preparations themselves before they received any contract with which they could operate.

166 The Academy will report to us within 16 months, which gives us a final 2 months to develop our recommendations to you. They will report on those specific items which you mentioned, oil shale and tar sands, and sand and gravel, within the first year of the contract.

166 In other words, we will try to maintain or shorten the intervals that were set forth in the legislation. Unfortunately, the beginning date slipped, so we felt advised to slip the reporting date as well.

166 Senator McCLURE. I can understand your dilemma but we have a problem from this end, too, in trying to pass laws and seeing that the administration complies with the law. What you are telling me is that the administration did not want to comply with the law, that it will be easier to violate the law than comply with it. Therefore, your intention is to violate the law. We got into that once before in which we were trying to get a study out of the administration in regard to a review of the national parks and wilderness category. And I had to threaten the President of the United States with a prosecution for a violation of the law before we could get the administration to move.

167 Is that perhaps what we have to do here, bring a lawsuit against the President of the United States for failing to comply with the law in order to get the administration to look at a date that is set by the Congress as being a serious date?

167 Mr. SMYTHE. I certainly wouldn't suggest that you do that, Senator.

167 Senator McCLURE. I didn't think you would.

167 Mr. SMYTHE. The point I would repeat is that, given the date that was necessary to start on -

167 Senator McCLURE. We gave you a law last August. The 8-months delay from the date that law was enacted until you got the money programed to CEQ was an administration action.

167 Mr. SMYTHE. That is correct.

167 Senator McCLURE. But the administration was taking that action with full knowledge that there was money for a study to be up here in August of this year, and the administration did not simply ignore the law. They were trying to implement it but they were doing so without any intention, apparently - they felt no need to comply with the date or time frame established in that law.

167 I know administrations have difficulty, but we have gone through a period of time when we criticized the "imperial presidency" and it seems to me that we have aspects of that in this, in which the administration decides that that time frame established by Congress was unreasonable so they would establish their own.

167 Mr. SMYTHE. As I said, - I am afraid I can't comment on the motivation there. I can only promise you, Senator, that we will deliver to you a professionally done, in-depth study of the impacts of mining reclamation of minerals other than coal.

167 Senator McCLURE. It is unfair of me to blame you for that. I know that. I am just - you are a representative of the administration and you are here, and I get frustrated.

167 Mr. SMYTHE. I appreciate your concerns. As I said, we have to deal with the budget offices of the administration on this.

167 Senator McCLURE. I think OMB is part of the administration, too, although sometimes they act more imperial than the Presidency, sir.

167 Senator FORD. Most of them are holdovers.

167 Senator McCLURE. From the Johnson administration.

167 Senator FORD. Oh, no; oh, no; no, they're not. Are you through?

167 Senator McCLURE. I will pick on that or perhaps the Kennedy administration.

167 Senator FORD. But there are 8 years in there that have been cleaned up. Don't you feel too bad. I got information kind of quickly that the President he threatened to sue was of the other party. I think you expedited whatever your position was and I compliment you for that. You have got your funds on March 29 and you awarded the contract on March 31. You did your presigning of the contract. All your work was done. And you were ready to move. So it really wasn't your fault.

167 I think Senator McClure is right. He should not be fussing at you. I think you are to be complimented for expediting it, as you say that you will have a professional, well-detailed report, that apparently you feel very confident in and you can be proud of and, therefore, we will have the report.

168 Senator McCLURE. Did I get from you that you expect that 12-months study will be available at 12 months from the beginning of this study?

168 Mr. SMYTHE. Yes, sir.

168 Senator McCLURE. That will be 20 months from the date of the act. Perhaps, Mr. Chairman, we ought to amend the law so that we at least don't have the President in the posture of violating the law.

168 Senator FORD. I don't think - the Congress is so "dadblamed" slow in getting things done and in the ability to make appropriations that they may be

waiting for a long time for us to amend the law. I doubt very seriously if we would get it through this year, and that might delay it that much more. I don't think we need to write any more laws. If you will just comply with what you are doing, we will be lucky to get it then.

168 Senator McCLURE. I understand the point you are making. All I am suggesting is that if we on the legislative side really want to control what happens downtown, then we should expect them to do what is set in the statute.

If it is a matter of fact they cannot do it in the time frame or need some change, they ought to ask us. And if they can justify the change and time frame that they have asked us to make, we ought to comply by making the change in the basic statute.

168 All I am trying to do is say he has said in good faith we have tried to do what you suggested. It is going to take us until 20 months from the date of enactment instead of 12 months, that we ought to take him on face value and good faith and say all right, we will agree, you can have 20 months; instead of leaving on the statute books a law that says in August of this year you still have something done and you have told us you can't have it done.

168 Senator FORD. Are you suggesting that we amend the surface mining law to extend it from the time it was supposed to be implemented to a time that Congress appropriated its funds and changed the law based on that?

168 Senator McCLURE. Well, he indicated -

168 Senator FORD. I am going back to surface mining. They had no appropriations, couldn't hire anybody, couldn't do any of these things. You were saying it, in essence, that we ought to amend the law extending the regulation period, the deadline forward that many weeks or that many months.

168 Senator McCLURE. I wouldn't object to that at all. I think there is some logic in what the Senator has said.

168 Senator FORD. I imagine it would. We are practically on the same wavelength. Thank you.

168 Senator McCLURE. Thank you.

168 Mr. SMYTHE. Thank you, gentlemen.

168 Senator FORD. We will look forward to your report. The committee is in recess following the recall of the chairman.

168 [Whereupon, at 1:05 p.m. the hearing was adjourned, subject to the call of the Chair.]