Office Of Surface Mining

Annual Evaluation Report

for the

New Mexico - Abandoned Mine Land Reclamation Program

Evaluation Year 2000 (October 1, 1999 through September 30, 2000)

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Part I. INTRODUCTION

This report to the Congress of the United States is produced by the Office of Surface Mining (OSM) in fulfilment of its Statutory responsibility under the Surface Mining Control and Reclamation Act (SMCRA) of 1977 as amended, to evaluate and assess the performance of the federally approved New Mexico Abandoned Mine Land Reclamation Program which conducts mine reclamation work under SMCRA. The report summarizes the finding and conclusions that OSM has made in its ongoing "oversight" of the approved New Mexico Abandoned Mine Land Program for the one year period beginning October 1, 1999, through September 30, 2000. In this process, special topics or "principles" were identified for evaluation in an oversight "workplan." In developing the workplan, New Mexico and OSM jointly agreed upon the scope of the oversight activities.

The intent of the evaluation is to convey to Congress the effectiveness and capability of the New Mexico AML Program to perform its responsibilities under SMCRA and in accordance with its approved Abandoned Mine Land Plan, on behalf of the Federal government and the Office of Surface Mining. In addition, it is intended to improve operations by offering advice and counsel to the AML Program. Finally, it is intended to convey to Congress the scope of reclamation work completed each year relative to the total inventory of known abandoned mine reclamation work that remains to be done. In addition, the empirical cost associated with completing this reclamation work is reported annually.

During this evaluation period, OSM visited newly reclaimed sites to see ongoing reclamation and to review contractor performance. OSM also visited sites with older reclamation to see actual field conditions, vegetation success of reclamation in the post construction / fully reclaimed phase (project close outs). At the State's request for a meaningful oversight undertaking, a multi-year special study was undertaken in 1999 to evaluate the quality of reclamation with regard to its ability to enhance fish and wildlife use. This study was concluded during this evaluation period.
New Mexico Mining and Minerals Division (MMD) and the Office of Surface Mining, Albuquerque Field Office (OSM -AFO) focused attention on maintenance of previously reclaimed abandoned mine land reclamation projects and the success of meeting the postmine land use by remediation of hazards, stabilization of the topography, providing suitable habitat and access to food and water sources.

PART II. GENERAL

New Mexico Environment :
New Mexico contains a diversity of ecosystems ranging from high, steeply sloping mountainous areas to semiarid plains and arid desert. Vegetative communities and wildlife are equally diverse across the state. Average rainfall ranges from a high of approximately 20 inches per year to a low of about six inches depending on elevation.

New Mexico Program Overview :
New Mexico's coal resource underlies approximately one-fifth of the state's surface (over 15 million acres) and totals over 40.6 billion short tons of coal.

As of September 30, 1999, New Mexico's six active coal operators had paid a total of $83,110,702.00 in AML fees since 1977 (an average of $3.8 million annually), of which $6,257,183.00 was paid in 1999 alone. Under SMCRA, New Mexico is entitled to receive 50 percent (50%) of the amount it collects or $41.6 million, to reclaim abandoned mine Land. As of September 30, 1999, Congress authorized a cumulative total of $26.2 million in State share funds for the New Mexico AML Program. OSM awarded this money to MMD in the form of reclamation grants for construction and program administration. New Mexico also received a cumulative amount of $5.3 million in federal share monies from the AML Fund over the years. The undistributed State share balance for New Mexico is $15.4 million ($41.6 million minus $26.2 million).

For FY-1999, New Mexico received $1,424,983.00 in State share distributions and $179,139.00 in Federal Share Distributions ($1,604,122.00 total). For FY-2000 the distributions increased by about 8%, $1,569,295.00 in State share distributions and $194,205.00 in Federal Share Distribution ($1,763,500.00 total).

Program Funding :
Because New Mexico has not reclaimed all of its high priority abandoned coal sites and because the State sometimes receives less than $1.5 million annually in funding, it often qualifies as a "minimum program" State as defined under the Surface Mining Control and Reclamation Act (SMCRA). As such it is often eligible for supplemental funding or historical distribution share. In FY-1999, New Mexico received $28,684.00 in supplemental funding. New Mexico believes that Congress acted contrary to SMCRA when it reduced the "minimum program" funding level from $2.0 million down to $1.5 million, for appropriation purposes. Congress has not formally amended SMCRA to change the $2 million funding level defined under the Act. This half-million dollar reduction has negatively impacted the New Mexico Program because it hampers New Mexico's already limited resources to address all the hazards within its inventory. New Mexico continues to inform OSM every year that it would like for Congress to reinstate the $2.0 million threshold prescribed by SMCRA.

Coal production resulted in $5.5 million in reclamation fee deposits in FY-1999 and $6.3 million in FY-2000. Under SMCRA, the State of New Mexico is entitled to fifty percent (50%) of the money deposited into the New Mexico AML fund, or $41,555,351.00 to date.

According to the OSM Annual Grant Distribution for 2000, as of September 30, 1999, Congress had appropriated a total of $26,192,091. of this money and New Mexico had a State Share balance of $15,363,260. available to draw from. As of September 27, 2000, the State Share balance was $4,353,322. Based upon the current rate of growth, New Mexico's unappropriated balance of the AML Trust Fund is estimated to exceed $28 million by the year 2004. New Mexico MMD intends to obligate about $4,000,000. by March 2001. However, the MMD noted that while OSM appropriates money in October when its fiscal year begins, the State does not apply for those funds until after July 1st (9 months later) when its fiscal year begins. Although New Mexico supports OSM's efforts to gain increased annual funding for AML Programs nationwide, it cannot obligate funds in sync with OSM funding. New Mexico also considers it a good management practice to retain sufficient funding in reserve to operate the program for at least two years so as to smoothly conduct its ongoing operations or to responsibly wind down the program if necessary should fee collections not extend beyond 2004.

Under SMCRA, the AML fund is only authorized until the year 2004. Construction grants awarded to AML Program States and Tribes are currently awarded for a three-year period. For the past three years, New Mexico has expressed an interest in receiving either a statement from Congress or an OSM policy statement for how AML programs will be phased out if the AML fund is not re-authorized. A phase-out policy statement is needed in order for States and Tribes to plan for phasing out the program and expending remaining funds. Both the State and OSM are supportive of extension of the AML fee beyond the year 2004.

Construction grants are awarded for a three-year term and the Administration grants are awarded for a one-year term. The annual administrative grant therefore covers the administration work for the current grant year. This includes administrative work that is being performed by the program to fulfill obligations under the two previous years Construction grants (which are awarded for a three-year term). In New Mexico, items such as project design and engineering, NEPA compliance and other environmental planning, and project management are all included in the Administration grant not the Construction grant. Consequently, actual projects costs are much higher than what is reflected by the project construction grant alone.

In FY-1999, OSM awarded an AML grant to New Mexico, GR-907350 in the amount of $1,980,674. Included in this grant was $1,020,262 for Program Administration, $800,000 for Project Construction and $160,412. in Future Set-Aside. Five different reclamation projects were funded in EY-1999, either in their entirety or as a phase of a project, including the Spar Group, Casamero Lake, Carthage Phase-3, Sugarite, and Madrid AML Projects. The administration portion of the grant has been closed out, and $91,427.54 was de-obligated.

In FY-2000, OSM awarded an AML grant to New Mexico, GR-097350, in the amount of $2,285,599. Included in this grant was $1,109,249. for Program Administration, $1,000,000. for Project Construction and $176,350. for Future Set-Aside. The grant application did not specifically mention which projects would be undertaken by this grant. However it identified that Construction projects for the grant will consist of various projects statewide potentially including hazards in the Santa Fe, Raton, Las Vegas, Ruidoso, Hilsboro, Grants, Lordsburg, Garfield, Lake Valley, Thoreau,

Deming, and Las Cruces areas.

Reclamation Priorities :
Historically, much of MMD's reclamation work has involved abandoned "coal" mines. As MMD continues to reclaim its high priority coal hazards in its inventory, it intends to direct much of its resources on equally hazardous abandoned "non-coal" mine sites in its inventory. The amount of un-reclaimed abandoned coal mine hazards in the State is steadily decreasing as MMD reclaims remaining priority-1 and priority-2 coal projects. At the same time, the New Mexico AML Program is emphasizing reclamation of priority-1 non-coal hazards and is planning to take on a few priority-3 coal problems. It is not foreseeable that New Mexico will have enough AML money to complete all of the high priority non-coal hazards that exist within the State unless the AML fund is extended beyond 2004. Non-coal hazards number in the thousands within the State.

Partnerships & Public Outreach :
In addition to its track record for sound engineering and environmental science, the New Mexico AML program has a reputation for promoting environmental reclamation and preservation on other fronts, including: public outreach to land owners, education of the public regarding hazards associated with abandoned mines, preservation of threatened or endangered species, protection of wildlife in general, and technical assistance to State and Federal Agencies. (See photographs of the Forum on Bats, at the end of this report).

The New Mexico AML Program is currently working with the Navajo Nation AML Program under a memorandum of understanding for reclamation of the Black Jack Mine north of Thoreau, New Mexico, which is situated in an area of mixed State and Tribal jurisdiction. Navajo AML is currently doing radiological monitoring and mapping at the site and providing necessary communication and gathering concurrences from Navajo-speaking residents in this area.

Public meetings are held by New Mexico's AML program as required. The State AML Plan provides for public hearings to be held at least 30 days prior to submission of grant applications to OSM.

Last year, MMD assisted authorities with the investigation of the circumstances that led to the death of a teenager at a non-coal AML site in southern New Mexico in the Oro Grande. As a result of that fatality, MMD recognized that the target group for its mine hazard education outreach is 17 and 18 year-old males. MMD is more actively targeting this age group, to educate them regarding the hazards associated with abandoned mines.

This year, MMD returned to the Oro Grande area to focus attention on the reclamation needs and revisit the priority ranking for the hazards in the area. Through its partnership initiative, MMD has shown the area to other interested agencies.

MMD also investigated a citizen complaint in the Madrid area regarding air pollution stemming from coal gob piles.

MMD is strongly supporting "reforestation" in its AML work. Most of the sites reclaimed in the last

few years include tree and shrub seedlings in the re-vegetation plan. This aspect of reclamation is an expensive undertaking in most areas of New Mexico due to significant vegetation losses experienced in the first year because of the arid climate.

Staffing & Organizational Structure :
The New Mexico AML program consists of eight (8) full time positions (FTE's) and the program also partially funds three (3) other managerial / administrative positions which provide support to AML and other MMD Bureaus. Including cost sharing, MMD funds the equivalent of 9.75 FTE's. The Mining and Minerals Division's (MMD), AML program is under the New Mexico Department of Natural Resources.

NEPA Clearances**:**
OSM has determined that MMD's NEPA compliance activities are effective and meeting Program requirements. MMD prepares Environmental Assessments and NEPA clearance documents using in-house staff and contractors as necessary. On occasion, the Program contracts with the Museum of New Mexico for bat surveys and other assistance.

Program Maintenance**:**
New Mexico received primacy under SMCRA on December 31, 1980. New Mexico's AML Program was subsequently approved by the Secretary of Interior on June 17, 1981 (Federal Register notice 46 FR 31641). This approval is codified at 30 CFR 931.20

In 1985, the New Mexico legislature enacted a statutory counterpart to section 410 of SMCRA to assume an emergency program. Although MMD's statute still includes provisions for an emergency program, it was never approved by OSM. Because of a lack of AML emergencies in the State, the MMD chose not to amend its AML plan to provide for an emergency program.

On July 24, 1995, New Mexico submitted to OSM a proposed amendment to its AML Plan, regarding the Abandoned Mine Reclamation Act of 1990 and the Energy Policy Act of 1992. The amendment was submitted in response to a September 26, 1994, Part 732 letter. OSM published a final rule in the July 24, 1996, Federal Register approving part of MMD's amendment and requiring New Mexico to submit additional amendments to address remaining concerns. MMD decided that the New Mexico AML program shall request a revision
to its Statute at a time when a significant amount of additional business is put before the Legislature. During the evaluation period, MMD submitted one formal and one informal amendment to its coal program. No amendments were submitted with regard to the AML Plan.

PART III. RECLAMATION ACCOMPLISHMENTS

- During EY-2000, MMD completed $849,894. in on-the-ground construction and maintenance projects. Project activities included Sugarite Phases I, II, & III; Carthage Phase II & III; Madrid Drainage; and, Fluorite Ridge. Project Maintenance work was done on the Black Copper Gold Mine, Bayard West (Manhattan Apts.), Flourite Ridge, and the Gallup West Subsidence Projects. Project Development activities included the Orogrande, Lordsburg II, Gore Canyon, Madrid North, Mogollon Road, Cerrillos Park, Real de Dolores, Lake Valley, Spar Group and San Pedro Projects.
- Post-completion inspections were made at Socorro West, Cochiti, Philmont, La Ventana, Bayard West, "A" Mountain, Clum, Foster, and Gage Projects.
- This project work resulted in the reclamation of seventeen (17) portals, twenty-eight (28) vertical openings, and two (2) acres of gob. In addition, a small amount of work was done with regard to remediation of hazardous or explosive gases and removal of hazardous equipment & facilities.
- New Mexico MMD has been actively involved in developing and enhancing partnership between AML programs in the southwest region and with OSM's AFO.
- The New Mexico AML Program continued work on the Black Jack Mine north of Thoreau, New Mexico, (now called the Casmero Lake Project) under a memorandum of understanding. This AML site is in an area of mixed State and Navajo jurisdiction.

PART IV. RESULTS OF ENHANCEMENT AND PERFORMANCE REVIEWS

The oversight workplan for EY-2000 identified three topics or principles (Directive AML-22) for review. The goal of these principles is to evaluate the quality of on-the-ground reclamation work and to generate ideas for improving operations if possible. In evaluating these principles, MMD and OSM held quarterly meetings, inspected various reclamation sites, reviewed quarterly AMLIS printouts for data entered into the AMLIS database and reviewed grants files, NEPA Documents, contract specifications, and procurement files.

Principle No. 1 - <u>On-the-ground reclamation is to be achieved in a timely and cost-effective manner</u>.

This principle was modified to focus on overall reclamation success and specifically how reclamation has enhanced wildlife by providing food and water sources as well as cover and habitat. The objective of this principle is to determine if projects are reclaimed in a manner which:

1) minimizes the amount of maintenance that is required;
2) promotes landscape stability;
3) provides established vegetation and cover for enhancement of wildlife diversity; and.
4) provides durable and effective safeguards or closures that abate hazards to humans and wildlife while preserving existing or providing new habitat.

Project maintenance was evaluated by assessing the long term landscape stability of the site based upon

the need for additional erosion controls, vegetation, or hazard remediation work. Overall reclamation success was evaluated based upon not only the effectiveness of the project design, closure methods and the ability to safeguard the site, but also on the capability of the reclaimed site to provide habitat and food / water sources to for wildlife. as well as meeting the post-reclamation land use. Revegetation design and success are important factors to establishing quality habitat for local wildlife.

During the course of the evaluation, the following twelve (12) AML projects were evaluated. These sites provided a representative sample for the entire State because the sites are scattered throughout the State and because they include both coal and non-coal projects. Inspection of the sites was performed as a team effort by both MMD and OSM personnel. Sites were inspected from EY-1998 through EY-2000. Reports regarding each site are contained in attachments to this report.

Project	Date Inspected	Personnel
Socorro West	September 3, 1998	Russ Porter, Rade Orell, Vern Maldonado
Water Canyon	September 24, 1998	Russ Porter, Vern Maldonado
Carthage	July 20, 1999	John Kretzman, Russ Porter, Rade Orell, Vern Maldonado
Cochiti	October 2, 2000	Ray Rodarte, Tom Wright
Turquoise Hills, Madrid	October 3, 2000	Ray Rodarte, Tom Wright, Willis Gainer
Fluorite Ridge, Gage, White Signal, Clum and Foster	October 4 & 5, 2000l	John Kretzmann, Edzel Pugh
Sugarite Canyon	October 18, 2000	John Kretzmann, Russ Porter

The sites were inspected during the fall in order to best assess the quality of vegetative cover, diversity and success.

The team also reviewed the project files for the sites in order to gather information about the site location, project design, hazards reclaimed, maintenance performed at the site and the reclamation objectives. Closure methods were evaluated to the extent that the hazards were abated and for any special accommodations the reclamation provided for wildlife or other site specific conditions. Successful project maintenance was based on observation and documentation of projects that abated hazards, resulted in stable reclamation and used any innovative reclamation techniques to improve stability.

Revegetation success was based on how well vegetation was established and the value of the seed mix

to local wildlife in providing tangible benefits to wildlife (shelter, source of food and nutrients, cover for wildlife, etc,). Enhancement of habitat provided by reclamation was a consideration in terms of easy access to the site by wildlife, an accessible water source, protection from human intervention. Overall reclamation success was based on the priorities identified in SMCRA, first being the effectiveness of the hazard remediation and secondly, consideration of landscape stability and vegetation success and wildlife habitat.

At each site, the team found that provisions had been made for wildlife in terms of habitat, cover, and food supply. In several cases, the vegetation did not do well due to extremely rocky or dry conditions or sometimes due to problem soils. In may cases, MMD attempted to correct poor soil conditions by incorporating soil amendments such as fertilizers, or lime into the soil. These efforts were not always successful. Drought is a major deterrent to vegetation, so extreme measures to establish vegetation are not considered by MMD or OSM to be cost effective.

At some sites "dry-water" gel containers were used with limited success. The gel slowly decomposes due to bacterial action and slowly releases water to the plant root. MMD incorporates a lot of tree seedlings into its reclamation specifications, especially in mountainous areas where water is more plentiful. When water is available, the seed mix and use of seedlings is more pronounced and the vegetation aspects of the reclamation specifications are expanded considerably. Reforestation is an obvious consideration in some of the projects such as at Sugarite Canyon and Carthage.

Based on this multiyear review, OSM concluded that MMD deserves recognition for its efforts in giving special attention to wildlife needs when it designs its reclamation plans and specifications. Closures incorporated state-of-the-art and innovative techniques and materials to abate public health and safety hazards. The techniques employed by MMD protected wildlife and historic values as required by conditions of NEPA compliance and consultation under section 106 of the NEPA. **MMD and its staff are commended by OSM for their outstanding efforts to conscientiously incorporate provisions for food and habitat into their reclamation designs that serve to promote, protect, and enhance native wildlife. The approach that MMD takes with regard to reclamation projects goes beyond mere hazard remediation. This study showed that MMD approaches its reclamation work within the context of the total ecosystem of the surrounding area.**

Despite the fact that much of New Mexico is largely a desert ecosystem, MMD has put together very effective reclamation plans to enhance the wildlife that use such an ecosystem. Raptors, bats, owls, rabbits, snakes and other reptiles were observed actively using the reclamation sites. Bat grates are used as much as possible and especially when there are existing populations or maternal colonies. Despite a ongoing and intense problem with vandalism, MMD has remained true to its commitment to preserve bat populations. Rather than being discouraged, maintenance of bat grates was approached with vigor by installing additional barriers to vehicles, hiding the openings from easy view, and using improved methods and materials to repair damage to grates and other structures.

Current bat grate designs used by MMD are in their third or fourth generation. Vandalism reached an unexpected level of intensity during 1996, when explosives were used to damage closures on one non-coal project. MMD's closures were weather- and vandalism-resistant under normal conditions.

MMD has not only modified the combination of materials used in the grate but has also developed unique designs for various types of mine openings (vertical, adits, drifts, portals, ventilation, ingress/egress, platforms, drainage modifications, etc.) and special situations like providing for owls or restricting owl access.

In addition, MMD is to be commended for its dedicated efforts to identify the extent of bat populations and the species of bats which inhabit these abandoned mines (artificial habitat). It is noted that MMD is careful to idedntify threatened or endangered species. Also, some bat grates provide for access by owls and some restrict owl access.

Principle No. 2 - Information on AML program operations and accomplishments should be gathered and maintained in the AMLIS database in a timely manner.

The objective of this principle is to determine how well NM-MMD:

1) Complies with OSM Directive AML-1 by maintaining (inputting or updating) information in AMLIS regarding funding and accomplishments.
2) Maintains the data to accurately reflect the inventory of reclamation needs within the State.

Accomplishments of the AML Program are reviewed under AMLIS every year. However, this year the OSM-AFO identified a goal under its Government Performance and Results Act (GPAR) responsibilities to ensure that all AML programs under its jurisdiction have AMLIS updated to accurately reflect the inventory standards of Directive AML-1. New Mexico was to update AMLIS accomplishments in a more timely manner this year.

New Mexico has indicated to OSM-AFO on several occasions that the reclamation costs previously entered into AMLIS were based on cost estimates done in the early 1980's when AML Programs were first approved and the initial coal inventories were done. Actual costs for reclamation work would be substantially higher in the year 2000. This year on its own initiative, New Mexico also revised several of the cost estimates in AMLIS for various Problem Area Descriptions (PADs) within the State. In addition, several new PADs were entered into AMLIS to reflect previously unidentified sites.

With regard to the need for funding, AMLIS now provides a more accurate picture of the reclamation needs within the State of New Mexico. AMLIS is a centralized database that contains a nationwide inventory of AML problem areas and associated hazards. It was originally intended to track all hazards & costs associated with abandoned coal sites within a State or Tribe. However, as States and Tribes certified completion of their coal sites they chose to undertake non-coal sites. Currently AMLIS only tracks “coal-related” projects and those “non-coal” projects that are either funded or completed. There is no database within AMLIS that inventories non-coal sites that are not funded or reclaimed. Consequently, there is no inventory in AMLIS that documents or tracks the amount of un-reclaimed “non-coal” hazards that exist, the projected cost to reclaim them, or their associated priority. For example, the number of vertical openings that exist from abandoned mineral (non-coal) mines in New Mexico is expected to number in the thousands.

OSM reviewed quarterly AMLIS reports this year and found that NM-MMD was promptly and accurately entering information into AMLIS for both funded and completed projects. In addition, OSM assessed actual Program accomplishments for EY-2000 by comparing end of year AMLIS report printouts with those for EY-1999. Of course, there is some additional work that has been done on projects that are not yet completed. OSM found that MMD is meeting the project reclamation goals established in its approved AML grant applications. New PADs are created in AMLIS when work is identified that needs to be added to the inventory. PADs are appropriately modified to reflect updated reclamation estimates and / or previously undiscovered additional AML features that need reclamation. PADs are being modified to reflect funding levels upon submission of NEPA compliance documentation prior to receiving authorizations to proceed, and to reflect accomplishments and final costs of completed projects. MMD is deleting PAD's from AMLIS upon documenting that they no longer constitute priority 1, 2, or 3 hazards.

MMD achieved success and excellence in its use of information systems. MMD also uses internally developed AML Project Status Sheets to provide its staff with the information it needs to successfully respond to inquiries and to track projects as they progress through environmental compliance processes and through the design and construction phases. In addition, MMD developed a color-coded filing system for its project files that makes it easy to locate information.

Principle No. 3 - Programs should have systems in place to ensure accountability and responsibility for spending AML fund expenditures and a process to assure that such systems are working.

The measure for this principle is that Programs should develop and maintain internal controls to ensure that proper procedures for grants and other activities are properly followed. These systems should include, but not be limited to, accounting records, contracting and procurement records, payroll records, inventory records and project records.

This is a cyclical review which continued from EY-1999. Specifically the review was conducted continuously throughout the evaluation period by evaluating documents submitted by the State and maintained in the official grant files located in the OSM-AFO, and through reviews of files maintained at the MMD - Administrative Services Department. The review focused on the internal controls associated with the management and control of transactions under the contractual object class of active AML Program grant agreements.

In completing this review, Grants and financial personnel from both MMD and OSM-AFO examined the files and the financial records.

The review consisted of an examination of a random sample of contractual object class expenditures under active AML grant agreements for the Abandoned Mine Land program. The Federal Assistance Manual at Chapter 1-47-00 outlines required grantee procurement record maintenance, including but not limited to, information pertinent to the following: rationale for the method of procurement, selection of contract type, contractor selection or rejection, and basis for the cost or price.

During EY1999 this same area of review revealed that one contractor hired under the AML program was operating under another NM Contractor's License. Although the subject contractor was not in compliance with applicable law at the commencement of project construction, the contractor eventually applied for and received his own contractor's license. The NM Administrative Services Department and the AML Bureau have reviewed internal controls associated with this area of review and have implemented corrective actions to avoid similar occurrences in the future. **The EY-2000 review concluded that NMMD's procurement of materials and services under active OSM Grant Agreements is in compliance with applicable New Mexico laws.**

OSM will continue to monitor this area of the New Mexico AML Program as a routine responsibility of OSM's grants management function.

PART V. AML INVENTORY REPORTS (AMLIS)

The Sugarite Gob Reclamation Project in Raton, New Mexico is a highly visible project site located in a State Park. Coal gob located at the site has degraded water quality and the overall quality of the park, due to its high erosion levels and its high visibility throughout the park. New Mexico's objective was to stabilize the site from erosion and improve the scenic landscape. This was a very challenging project from an engineering perspective because Chicorica Creek runs along the toe of the gob piles and because the site is in a very steep canyon.

The possibility of transporting the gob to a landfill location was not a viable option due to the excessive costs that would be associated with transporting such huge amounts of material. MMD researched possible reclamation alternatives and found a "branch packing" (in existing erosion ditches) method / approach that originated outside the United States which they felt would be an effective approach for reclamation. Although risky and expensive, the program decided to go forward with the project. Two years later, with reclamation work still ongoing in separate phases, the approach looks very promising overall and seems to be already successfully working on the older reclamation. Material is sluffing off of the steep erosion banks (approximately 5-10 feet high) onto the branch packing. Material in the erosion channels is being trapped by the branch packing. Hay bales and straw waddles are also working to controlling erosion and best of all, seedlings are experiencing a good success rate because of chemical additives and stabilizers added wherever possible.

Contract specifications require watering for a period of time to get the seedlings started and require a specified success rate. The seedlings will eventually serve to provide a visual barrier from the black gob material and will eventually anchor the material as a final permanent protection against further erosion. In selecting diverse seedlings, consideration was given to the erosion control that they would provide through the root system as well as species that would provide food, shelter and habitat to area wildlife as well. This Project site demonstrates the innovation of the New Mexico AML program and OSM encourages MMD to submit the Project for consideration under the Annual Reclamation Awards Program.

Cumulative (year to date) Program Accomplishments :
Since1981 when the AML program was created, approximately $9,824,818. has been spent for on-

the-ground reclamation work, $6.5 million of which was spent by the AML program for reclamation of "coal" related mine hazards. To date, approximately **244 acres (MMD - Please update this number)** of land has been reclaimed by the New Mexico AML program. For EY-1999, OSM reported that approximately 1,200 closures had been completed by MMD (source NM-MMD Web Page). This year an additional 45 openings were reclaimed (28 vertical openings and 17 portals) bringing the total to 1245 closures.

Because very little surface mining occurred in the State prior to SMCRA, most reclamation work involves the reclamation of underground mine hazards. Although the acreage associated with underground mining is small relative to surface mining, the number of hazards encountered are high and the danger associated with these hazards is extreme. For this reason, The New Mexico AML Program often refers to abatement of hazards such as mine openings and shafts (closures) and the removal of hazardous structures and facilities as "safegarding" of the site rather than reclamation. Reclamation performed by the AML program has predominately returned the land to its premining land use of grazing, however, New Mexico has also incorporated other post-reclamation land uses, such as wildlife enhancement, into its designs. **MMD's willingness to provide technical assistance to other AML programs, needs to mentioned as an accomplishment.** OSM finds that it is cost effective for AML programs to assist one another in technologies, sharing experience and knowledge and specialized equipment.

AMLIS Database :
The AMLIS database contains an inventory of priority 1, 2, and 3 hazards associated with both coal and non-coal abandoned mines. However, non-coal information is only contained in AMLIS if those hazards have been funded or reclaimed.

According to AMLIS, the cumulative total (year to date) of all reclamation work performed by the New Mexico AML program as of the end of this evaluation period (September 2000) is :

-Benches	3.0 acres	-Equipment and Facilities	12
-Dangerous Piles and Embankments	6.5 acres	-Hazardous Equipment & Facilities	17
-Gob Piles	55.0 acres	-Priority-3 Mine Openings	4
-Haul Road	6.0 acres	-Portals	433
-Spoil Area	2.0 acres	-Pits	2
-Surface Burning	35.0 acres	-Polluted Water: Agri. & Indust.	4
-Slurry	2.0 acres	-Polluted Water: Potable	1
-Underground Mine Fire	32.0 acres	-Subsidence	36.6
-Clogged Stream Land	0.5 miles	-Vertical Openings	640

[Note: the left column above is in "acres" the right column is a numerical "count" of features]

Total cost of this work is $9,824,818.00 (AMLIS report 09/30/00). Substantially more has been spent on project maintenance, project development for NEPA and project design engineering (done in-house). The total unfunded cost associated with coal reclamation identified under AMLIS is ***$6,228,512.*** *($4,255,700. for Priority 1 & 2 and $1,97,812. for Priority 3 projects). However, MMD estimates that if the non-coal abandoned mine hazards were included in the*

AMLIS database, there would be about $87.1 million in unfunded costs.

The AMLIS accomplishments specifically for EY-2000 are discussed above (see Part III Reclamation Accomplishments on page 8).

New Mexico's Non-coal Inventory :
Although not all non-coal hazards in New Mexico are inventoried in AMLIS, preliminary estimates show that at least 2,000 additional un-reclaimed portals and 14,000 vertical openings exist which are associated with non-coal that require safegarding (hazard abatement / reclamation). The estimated cost of reclaiming these remaining high priority "non-coal" hazards is $32 million.

PART VI. Executive Summary / Conclusions :

OSM's evaluation of the New Mexico program concludes that the New Mexico AML program is an exemplary program that makes cost-effective use of its AML funds but prefers not to cut corners with regard to quality reclamation. MMD sites require little maintenance, with the exception of what is due to vandalism. It's overall use of AML funds during this evaluation period funds is consistent with the priorities established under SMCRA.

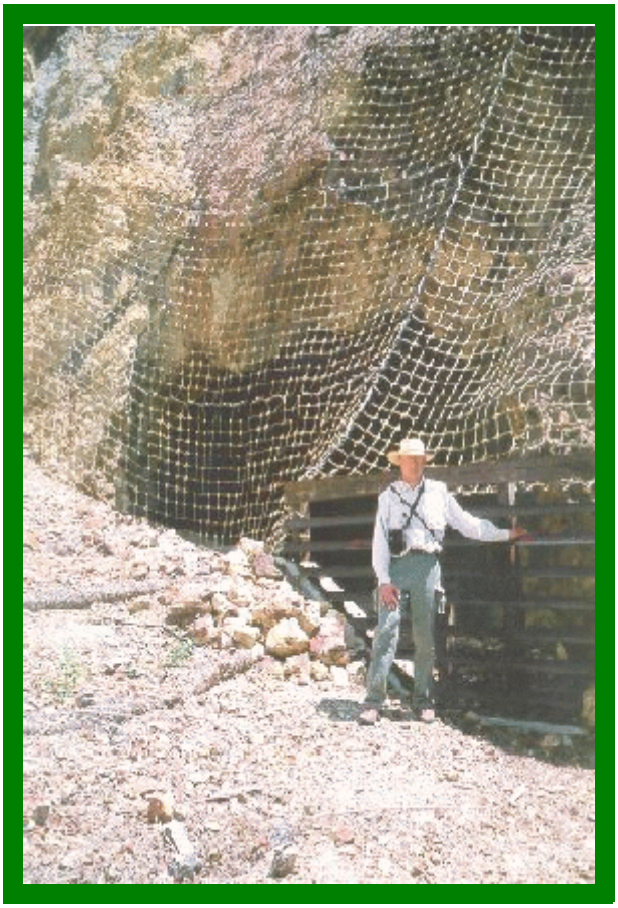
Construction work accomplished by the New Mexico AML program is done under contract through competitive open bid, wherein all bids are publicly opened and contracts are awarded to the low-bidder. Both open competition and sound project designs ensure that all reclamation work is cost-effective. New Mexico does not give in-State preference to contractors. Field oversight inspections have confirmed that stringent monitoring of contractors by New Mexico MMD ensures that all reclamation work is of high quality, timely, and consistent with contract specifications.

MMD's total estimated cost for on-the-ground construction & safegarding of all remaining coal and non-coal hazards in its inventory (inventoried priority-1, 2 and 3 coal and as well as all priority-1 and 2 non-coal hazards) is $87.1 million. This projected cost does not include the project development and administration costs (NEPA compliance, project design engineering, contracting, and project management) which can be substantial. New Mexico estimates that the total costs would at least double if these costs were included in the estimate. The total costs of all the inventoried hazards in the State far exceed the currently projected AML funds which are expected to be available through 2004.

Part VII. Project Construction Photos

Concrete Footer Poured into Forms at Portal Entry. It will Serve as an Anchor for the Bat Grate and Cable Net.

Bat Grate Assembly Anchored to Concrete Footer and Welded into Place.

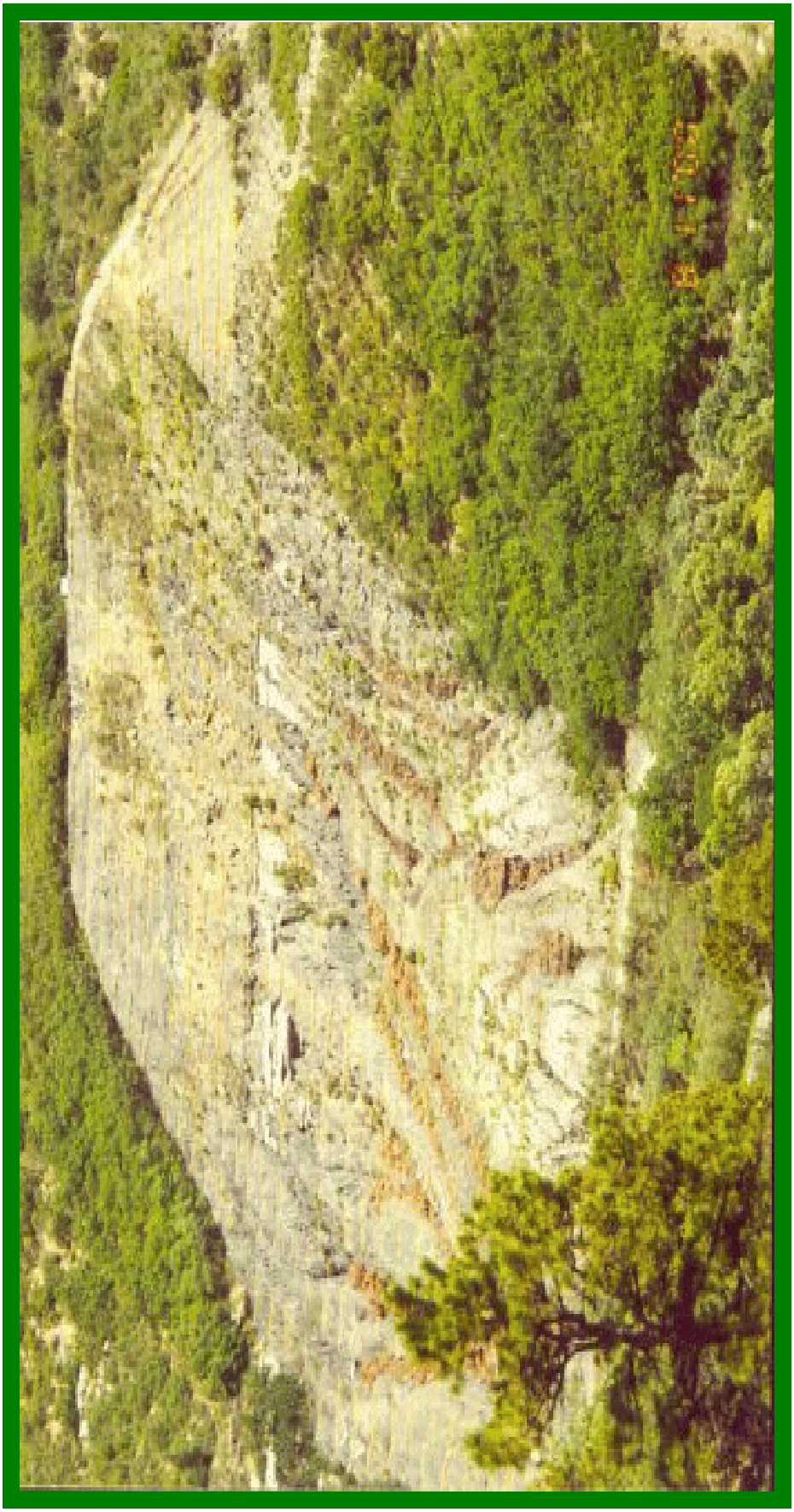


Final Bat Grate and Cable Net Closure

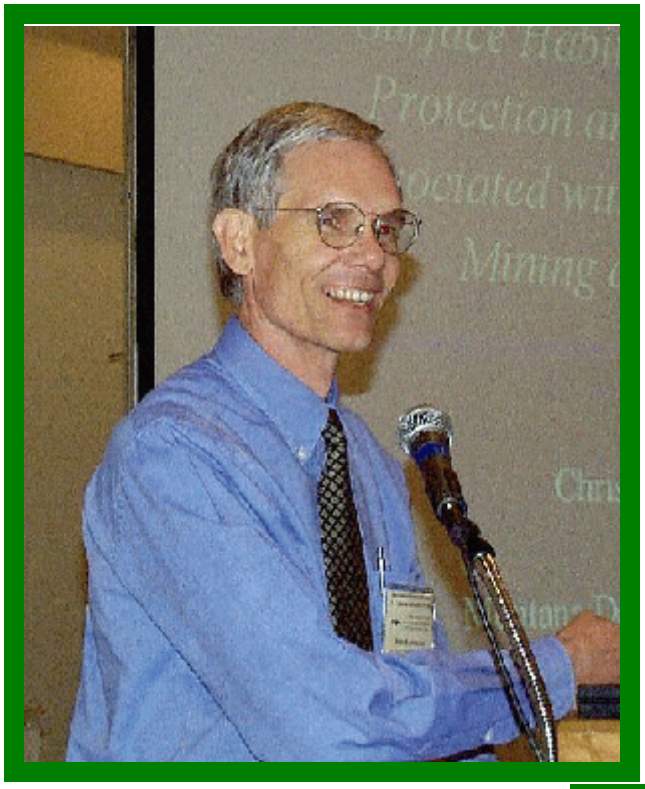
Sugarite Canyon Reclamation Project Untreated Erosion Channel on Left

Branch Packed Channel on Right

Sugarite Canyon Reclamation Project: First Year Vegetation Includes Sumac, Rk. Mt. Juniper, Four-wing Saltbrush, Pinon and Mt. Mohogany. Some Areas treated with Soil Stabilizer & Fertilizer (EcoAegis Bonded Fiber Matrix & Biosol 6-1-3).



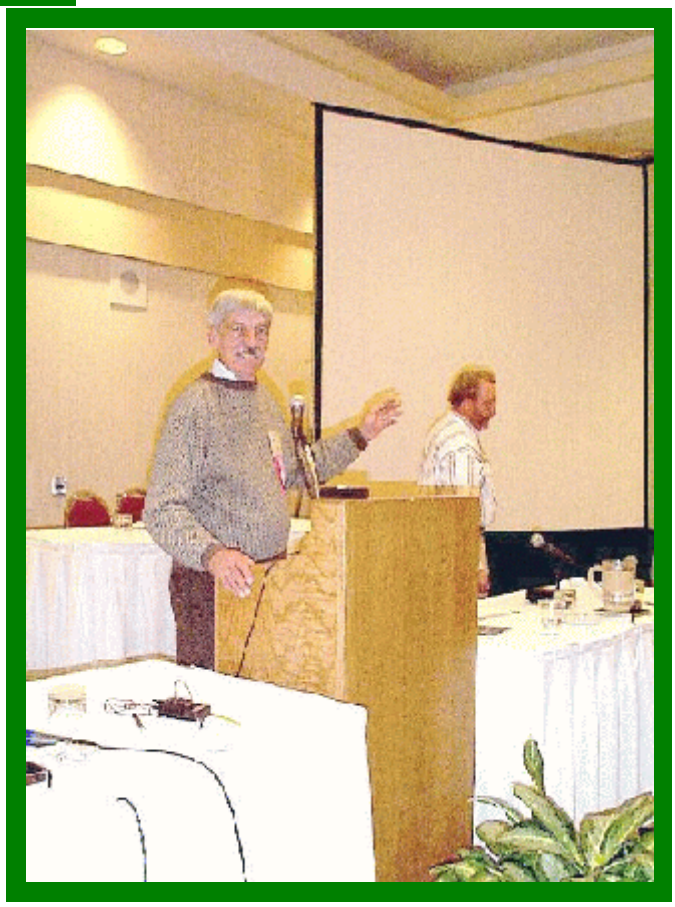
Sugarite Project: View of One of the Large Gob Piles. Brown Areas are Dry -Trees Packed into Erosion Channels. Straw bales and Straw Waddles are Visible Along the Contour.



PARTNERSHIPS

The New Mexico Mining and Minerals Divison is Very Active in Outreach and Sharing Technical Information. They Sponsor and Participate in Various Mining and Reclamation Forums.

New Mexico Mining and Minerals Division
AML Program Engineer, Mr. John Kretzmann..... Addressing Audience at the 2000 "BAT CONSERVATION AND MINING FORUM." Mr. Kretzmann Presented Engineering Designs for Various Bat Grate and Cable Nets and the Pros and Cons of each.



Mr. Homer Milford, Mining and Minerals Division Biologist Gave a Detailed Presentation Regarding "Challenges in Protecting Bat Populations" (When Reclaiming Abandoned Mines).

His Presentation Provided Information Regarding the Specific Needs of Various Bat Species in Terms of Food, Habitat, and Wintering Hibernaculums Gained by His Years Experience in the Southwest.