

ANNUAL SUMMARY EVALUATION
of the
COLORADO INACTIVE MINE RECLAMATION PROGRAM
for
EVALUATION YEAR 2007
(July 1, 2006, through June 30, 2007)



September 6, 2007



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ACRONYMS

AML	abandoned mine land
AMLIS	Abandoned Mine Land Inventory System
AMR	Abandoned Mine Reclamation
BLM	Bureau of Land Management (of the U.S. Dept. of the Interior)
CIMRP	Colorado Inactive Mine Reclamation Program
DFD	Denver Field Division (of the Office of Surface Mining)
DNR	Colorado Department of Natural Resources
DOGM	Utah Division of Oil, Gas and Mining
DRMS	Colorado Division of Reclamation, Mining and Safety
NAAML P	National Association of Abandoned Mine Land Programs
OIG	Office of the Inspector General (of the U.S. Dept. of the Interior)
OSM	Office of Surface Mining Reclamation and Enforcement (of the U.S. Dept. of the Interior)
SMCRA	Surface Mining Control and Reclamation Act of 1977, as amended
USFS	Forest Service (of the U.S. Dept. of Agriculture)

Cover photo: Golden Harp project closure of vertical opening W-2 constructed with a steel grate and concrete footer. August 8, 2006.

I. Introduction

Title IV of the Surface Mining Control and Reclamation Act of 1977 (SMCRA or “the Act”) established the Abandoned Mine Reclamation Fund. The Fund’s primary purpose is to pay for mitigation of past mining effects. The Office of Surface Mining Reclamation and Enforcement (OSM) administers the Fund on behalf of the Secretary of the Interior. OSM awards grants to States and Tribes from the Fund to pay their administration costs and reclaim abandoned mines. SMCRA puts the highest priority on correcting the most serious abandoned mine land (AML) problems that endanger public health, safety, general welfare, and property. OSM and State and Tribal AML programs work together to achieve the goals of the national program. OSM also works cooperatively with the States and Tribes to monitor their AML programs.

On December 20, 2006, the President signed the Tax Relief and Health Care Act of 2006 (P.L. 109-432). That legislation included the Surface Mining Control and Reclamation Act Amendments of 2006 (the 2006 Act). The 2006 Act amended title IV of SMCRA to make significant changes in the abandoned mine reclamation fee and the AML program. OSM presently is developing regulations to implement the 2006 Act.

Directive AML-22 generally describes how OSM evaluates State and Tribal AML reclamation programs in “enhancement and performance reviews.” Following that Directive, a team of State and Federal personnel, called the Colorado-Utah AML Review Team, has evaluated the Colorado Inactive Mine Reclamation Program (CIMRP) and the Utah Abandoned Mine Reclamation Program (UAMRP) since January 1996. The team includes representatives of CIMRP, UAMRP, and OSM’s Denver Field Division (DFD). Team members during the 2006 evaluation period included: Frank Atencio, Grants Management Specialist, OSM-DFD; Luci Malin, Acting Administrator, UAMRP; Mark Mesch, former Administrator, UAMRP; Loretta Pineda, Administrator, CIMRP; and Ron Sassaman, Environmental Protection Specialist, OSM-DFD. Julie Annear, CIMRP, helped with our field evaluation of sample projects for the 1(b) evaluation because she managed those projects. Tony Gallegos represented UAMRP during our 1(b) evaluation. Yvonne Brannon, CIMRP, helped with our evaluation of the 2(e) performance measure.

This report summarizes our review and evaluation of the Colorado Inactive Mine Reclamation Program for the 2007 evaluation year, which included the period of July 1, 2006, through June 30, 2007.

II. General Information on the Colorado Program

On June 11, 1982, the Secretary of the Interior approved Colorado’s AML reclamation plan (“State reclamation plan”) under Title IV of SMCRA. That approval allows Colorado to reclaim abandoned mines in the State in non-emergency AML projects. CIMRP is part of the Division of Reclamation, Mining and Safety (DRMS) in the Department of Natural Resources (DNR). It administers Colorado’s AML program under its approved plan. The Denver Field Division of OSM’s Western Region works

with CIMRP to fund and approve AML projects in Colorado and to evaluate AML reclamation and other aspects of the Program.

Section 405(f) of SMCRA authorizes State and Tribal AML programs to apply to OSM each year for a grant to support their programs and reclaim specific projects. Colorado's grant performance periods span the period of July 1 of one year through June 30 of the following year. That period coincides with the State's fiscal year and OSM's evaluation year. CIMRP's grants include money to pay the Program's administrative and construction costs. Administration funding applies to a single year following the grant award date and construction funding is available for three years after that date.

Colorado had two grants active during the 2007 evaluation year and applied for a third grant. OSM previously awarded \$2,415,000 to CIMRP in the 2005 grant. The grant funded 14 positions and other program administration costs. The grant also funded reclamation of three coal and twelve noncoal projects and project maintenance, with the goal of safeguarding about 295 mine openings. It also funded development of 12 projects CIMRP plans to include in its 2006 grant request. OSM extended the performance period of the administration part of this grant through June 30, 2006, and added \$450,000 from Colorado's state share fund balance to accommodate changing the grant period as described above. The State's 2006 grant award totaled \$2,419,000. It funds 14 positions and other administration costs as well as reclamation of four coal and 11 noncoal projects and project maintenance. Goals of the 2006 grant include safeguarding 308 hazardous mine openings. The grant also funds development of at least 12 additional projects for inclusion in the State's 2007 grant application. OSM awarded Colorado's 2007 grant on May 11, 2007, though it did not take effect until July 1, 2007.

CIMRP receives funding each year for AML reclamation in addition to its SMCRA grants. Colorado Senate Bill 05-190 became law on July 1, 2005. That bill created the Abandoned Mine Reclamation Fund under Title 34 of the Colorado Revised Statutes. That statute authorizes the Legislature to annually appropriate \$500,000 to the Colorado DNR for allocation to DRMS for abandoned coal and hardrock mine reclamation. DRMS has three years to spend each appropriation. The additional funding supplements Colorado's SMCRA-funded grants and enables CIMRP to abate a wider range of abandoned mine problems. Beginning July 1, 2006, CIMRP also will receive \$250,000 additional severance tax funding for water quality and conservation projects related to abandoned mine areas. Some of the partnerships described below in Part III benefited from this additional funding.

Colorado oversees an insurance brokerage firm's administration of the State's approved Mine Subsidence Protection Program. A total of 919 active member households were enrolled in the insurance program at the end of April 2007. That enrollment is an increase of 10 member households since June 30, 2006. Of that number, 833 member households are located in the Colorado Springs area. Another 74 are in the Boulder/Weld coal field. Ten member households are in the Rocky Mountain foothills

and the remaining three are on the Western Slope. Members filed two claims during the period of July 1, 2006, through June 30, 2007, both for residences in the Colorado Springs area. Both claims still were open as of June 30, 2007. An investigation of one claim showed the problem might not be related to abandoned mine subsidence but the State continues to monitor it before reaching a conclusion. The second claim remains to be investigated.

Colorado submitted to OSM a formal amendment (CO-031) to its AML plan on October 29, 1996. OSM's review generated one substantive concern and a number of editorial comments, which it described in a letter to the State dated June 7, 1999. CIMRP drafted several proposed changes in response to that letter over the following years without submitting them formally to OSM. Our 2001 evaluation recommended the State further amend its plan to update its project ranking and selection process. Colorado combined the final revised changes it developed in response to the June 7, 1999, letter with a proposed revised project ranking and selection process and additional changes in a formal revised amendment it submitted to OSM on June 15, 2005. OSM approved the revised amendment in the September 18, 2006, Federal Register (71 FR 54583).

Colorado does not have an OSM-approved emergency coal reclamation program. However, the State is considering applying for OSM approval of a State emergency program after discussing it with DFD during the 2007 evaluation year.

III. Noteworthy Accomplishments

CIMRP participated in several activities during the 2007 evaluation period related to public outreach, technology transfer, and training.

The Program's public outreach activities included:

- Distributing *Stay Out and Stay Alive* videotapes and compact discs to promote AML safety awareness in partnership with UAMRP and BLM;
- Participating in meetings of the Western Governor's Association, the Interstate Mining Compact Commission, the Board of the Colorado Foundation for Agriculture, the Colorado Association of Conservation Districts, and the Inactive Mine Reclamation Advisory Committee;
- Participating in the Willow Creek Reclamation Committee Tour and the Boulder Water Festival;
- Sponsoring exhibits at the Colorado State Fair, the Taste of Colorado, the Science Convention, and the annual conference of the Colorado Mining Association / Society for Mining, Metallurgy, and Exploration;
- Sponsoring the National Mining Communities Summit, Animas River Stakeholders Festival, and Tourist Mine Workshop; and
- Making presentations for the annual meeting of Colorado Preservation, Inc., Central City, spring and fall meetings of the Northwest Conference, a meeting of the Clear Creek Metal Miners, a meeting of the Colorado Watershed Assembly, and a meeting of the Clear Creek County Commissioners.

CIMRP's technology transfer, technical assistance, and training activities included:

- Attending and making presentations at the National Association of Abandoned Mine Land Programs (NAAMLPL) annual conference, AML reauthorization meeting, and mid- winter meeting. CIMRP's Administrator is the NAAMLPL vice-president;
- Participating in the Colorado Nonpoint Source Forum, the Colorado Watershed Assembly, the Colorado State University High Altitude Revegetation Conference, an EPA workshop, the Clear Creek Watershed meeting, and partnership meetings with the DRMS and BLM;
- Judging entries in the Colorado State Science Fair and;
- Providing instructors for OSM-sponsored training in GIS mobile computing, revegetation, AML project management, and coal fire abatement.

CIMRP continued to partner with other agencies to leverage its SMCRA funding for AML reclamation and/or to address a wider range of AML problems than those ordinarily funded under SMCRA. During the 2007 evaluation period, it partnered with the U.S. Department of Agriculture, Forest Service on four noncoal projects and with the U.S. Department of the Interior, Bureau of Land Management, on three noncoal projects. CIMRP also partnered with the Colorado Department of Public Health and Environment and the BLM on an abandoned uranium mine project that will safeguard mine openings and reclaim mine waste. In addition, the Program is collaborating with private individuals, the Colorado Department of Corrections / Vocational Training Program, the Victor Gold Mining Company, Teller County government, the Teller County Soil Conservation District and the BLM on a project to stabilize and reclaim mill tailings. The Program also manages the bond forfeiture reclamation program for the Division of Reclamation, Mining and Safety.

CIMRP also manages the State's nonpoint source program in partnership with other organizations to address mining-related water quality issues throughout the State. Those partners have included: Crested Butte Land Trust; Colorado Department of Public Health and Environment's Water Quality Control Division; San Juan Resource Conservation and Development Council; Animas River Stakeholders Group; Lake Fork of the Gunnison Watershed Group; Lefthand Creek Watershed Oversight Group; London LLC; Lake Fork of the Arkansas Watershed Group; the Western Museum of Mining and Industry; Willow Creek Reclamation Committee; U.S. Environmental Protection Agency (EPA); and the BLM, Forest Service, National Park Service, and private landowners.

IV. Results of Enhancement and Performance Reviews

We updated the current "Colorado-Utah AML Review Team Performance Agreement" in a conference call on March 7, 2007, to describe the principles of excellence and performance measures that we planned to review in the 2007 evaluation year.

Principles of excellence and performance measures emphasize on-the-ground or end-results as much as possible. Each general principle of excellence has one or more specific performance measure(s). Performance measures describe: Why we selected that topic; what the review population and sample sizes will be; how we will do the review and report the results; and our schedule for completing the review. The principles of excellence and specific performance measures we chose for our 2007 evaluation of the Colorado Inactive Mine Reclamation Program are:

Principle of Excellence 1: The State's on-the-ground reclamation is successful.

- *Performance Measure (b):* Is reclamation successful on a long-term basis?

Principle of Excellence 2: The State AML procedures are efficient and effective.

- *Performance Measure (e):* Does the information the State entered into AMLIS beginning July 1, 2004, agree with information in its files?

Results of our 2007 evaluation are described in Parts IV.A and B of this report. Our evaluation of the 1(b) performance measure included field visits to two noncoal projects and reviews of CIMRP's project closeout reports and specifications, grant applications, and AMLIS data. The 2(e) evaluation involved comparing data in Colorado's project closeout reports to data in the respective Problem Area Descriptions (PADs) in the Abandoned Mine Land Inventory System (AMLIS) for the sample projects at OSM's Denver office. We described our evaluation results in much greater detail in an enhancement and performance review report for each performance measure. Those reports are on file in OSM's Denver Field Division and are the factual basis of this report's summary of our evaluation of performance measures 1(b) and 2(e).

A. Summary Evaluation of Performance Measure 1(b)

For the purpose of this evaluation, we defined "long-term" reclamation as a project Colorado completed more than three years before the date of our planned field review. Our evaluation sample included the Good Hope and Golden Harp noncoal projects and the Industrial coal project in Boulder County. Features Colorado safeguarded in the Good Hope project were reclaimed the longest. Reclamation of the North and Good Hope 2 subprojects was just over 9.8 and 8.9 years old, respectively. Colorado's reclamation of the Sunshine and Ward subprojects of the Golden Harp project was slightly less than 7.9 years old and slightly over 7.9 years old, respectively. Finally, reclamation of the Industrial Mine in the Industrial project was the most recent, having been completed about 3.8 years ago.

We viewed closures of 85 features that CIMRP completed in two noncoal projects and one coal project. Those features included 38 portals and 47 vertical openings. We found that 77 of the 85 closures we viewed were intact and functional for an overall long-term reclamation success rate of about 90.6 percent. We concluded overall that Colorado's reclamation of those 77 safeguarded mine openings was successful on a

long-term basis. The vast majority of CIMRP's closures remained intact and functional for 3.8 to 9.8 years despite harsh environmental conditions and vandals, attesting to their durability. Surface drainage and friable rock/soil materials played a major role where maintenance was needed. Closing these mine openings abated extreme hazards to public health and safety in increasingly popular outdoor recreational areas. At the same time, we recognized that CIMRP should address problems and restore public protection at eight locations. CIMRP took advantage of our field review to document the condition of reclaimed openings we visited and to record their GPS locations for monitoring purposes.

We based our determination of long-term reclamation success on two factors. First, we considered if the measures Colorado used for hazard abatement were intact and functional. Second, we considered whether the State's reclamation continued to improve restored areas over their previously abandoned condition. All the closures we visited are accessible despite being located on private land and/or remote areas. The State's reclamation of the noncoal and coal mine openings was limited to hazard abatement and did not directly address waste piles, drainage, or structures. If we observed problems at the closures we visited, we determined if they were described in the project specifications, if they occurred since Colorado completed reclamation, if they were hazardous or not, and if maintenance was needed to correct them.

Colorado constructed 12 types of closures at the 38 safeguarded portals we visited.

They included: Machine backfills; steel grates with bat slots; native stone bulkheads; corrugated metal pipes, including one with a bat grate and locking access door, one with a locking access door only, and one with a bat grate only; steel grates with locking access doors; bat gates; hand backfills; pre-cast concrete panels; a native stone bulkhead with a locking access door; and a steel grate alone. Photo 1 (at right) shows a steel grate closure of a portal. We noted drain pipes installed in backfill and native stone bulkhead closures and in closures with steel grates and bat slots. All but six of the 38 portal closures were intact as constructed and locking access doors were locked. We agreed those six closures should be maintained to correct hazardous or potentially hazardous conditions. Vandals damaged the steel grate on one portal closure. Settling of backfilled closures to various degrees was the most common problem, and we encountered it in closures of five portals. We noted settling in other backfilled portal closures not mentioned here that did not appear to be hazardous or to pose potential hazards at the time of our field review.



Photo 1. Steel grate closure in portal SG-6 of the Good Hope project. August 8, 2006.

The State used ten types of closures to safeguard the 47 vertical openings we visited. They included: Machine backfills; monolithic plugs (which include backfill material



Photo 2. Corrugated metal pipe with locking access door closure in vertical opening S-33 of the Golden Harp project. August 9, 2006.

overtop); steel grates; pre-cast concrete panels; pre-cast concrete panels with locking access doors; hand backfills; steel grates with concrete footers and locking access doors; a steel grate alone with a concrete footer; a corrugated metal pipe with a locking access door; and a backfill using grout under pressure. Photo 2 (left) shows the closure constructed of a corrugated metal pipe with a locking access door. Closures of forty of the 43 safeguarded vertical openings we viewed were intact and functional. Those with locking access doors

still were locked. We agreed that two closures of vertical openings needed maintenance, including one backfill closure that settled in a vertical opening and pre-cast concrete panels that collapsed in a vertical opening most likely when

material on one side sloughed off due to surface drainage. We considered the settled backfill closure in one vertical opening to be no longer intact but it was not hazardous, either. Photo 3 (below right) shows the damaged pre-cast concrete panel closure.

Several mining-related structures and remnants of machinery were located throughout the project areas we visited. CIMRP avoided disturbing structural and other remnants at the sample projects as the State Historic Preservation Officer directed.

CIMRP's reclamation routinely protects bats and bat habitat as part of the cooperative Bats and Inactive Mines program with the Division of Wildlife. Specialized mine closures allow use of underground workings by bats while preventing access by people. We viewed nine bat-compatible closures during this evaluation, including bat gates, steel grates with bat slots, and corrugated metal pipes with bat grates.

We also found five vertical openings that were not part of CIMRP's previous projects and one problem involving a project that was not part of our review sample. Those openings posed conditions that were or could become hazardous.



Photo 3. Damaged pre-cast concrete panel closure of vertical opening S-47 of the Golden Harp project. August 9, 2006.

Performing maintenance on projects this old is becoming problematic due to the increasing number of mine features Colorado safeguarded over the years. We

recognize that, in most cases, CIMRP considers maintenance a landowner's or land management agency's responsibility after initially safeguarding a mine feature or sometimes after maintaining it once. Depending on public safety considerations, location on private lands or access restrictions, economies of scale, and/or the possibility of cost sharing with land management agencies, we recommended Colorado schedule and perform maintenance to address the problems we found that were hazardous or potentially hazardous. We also recommended that the program monitor two other closures for possible maintenance needs.

B. Summary Evaluation of Performance Measure 2(e)

In September 2004, the U.S. Department of the Interior, Office of the Inspector General (OIG), issued report number 2003-I-0074 based on its review of AMLIS data for four eastern States' abandoned mine land programs. That report criticized the accuracy of the Abandoned Mine Land Inventory System (AMLIS) data in Problem Area Descriptions (PADs), concluding that AMLIS data did not match data in the respective States' files. In part, the OIG recommended establishing "a quality control system that ensures that States, Tribes, and OSM, as applicable, review and certify the accuracy of data entered into AMLIS."

OSM responded to the OIG's recommendation with two new requirements for program evaluations. The first required OSM field offices to "assure that each State and Indian Tribe AML program has procedures in place to ensure and certify the accuracy of data entered into AMLIS." We evaluated CIMRP's system for ensuring that data it enters into AMLIS match data in its files in evaluation year 2005. CIMRP uses project closeout to compile data for AMLIS input. For the purposes of this evaluation, we consider the project closeout reports to be CIMRP's "system" for ensuring that completion data it enters into AMLIS match data in its files. We developed performance measure 2(e) to address the second new requirement. Our evaluation of that measure involves an annual comparison of data in a sample of Colorado's AMLIS PADs to data in the State's closeout reports.

The purpose of the 2(e) evaluation we completed this year was to determine if CIMRP's system worked as intended, i.e., to ensure that data it enters into AMLIS match data in its files. Our review involved comparing cost and accomplishments data in the sample projects' PADs to cost and accomplishments information in their respective closeout reports. This was our second annual evaluation of CIMRP's use of that system to update AMLIS. Our evaluation sample included closeout reports for 14 noncoal projects and those projects' respective PADs. All of the sample projects safeguarded abandoned noncoal mine features. One project also safeguarded one abandoned coal mine portal.

Our review of the 14 project closeout reports and their respective PADs showed that the data in each of CIMRP's closeout reports differed to varying degrees from AMLIS data. As with the 2006 evaluation, we concluded that CIMRP was not able to fully implement its system to ensure that data in its files match AMLIS data.

Comparing data in AMLIS PADs to CIMRP's closeout report data remains imprecise. This problem results from Colorado's continuing use of County-wide PADs for noncoal projects and from problems inherent to the AMLIS database. All the sample noncoal PADs include data for multiple projects. Three sample projects involved two noncoal PADs each. Though some noncoal PADs include data for more projects than others, in every case the only way we could distinguish project-specific data was by correlating them to project completion dates in the PADs. As a result, definitive data comparisons were not possible, though we believe the correlation to completion dates yielded the correct project comparison in all but two cases and indicated those we were unsure of. This can become problematic for CIMRP as well, such as when more than one project included in one PAD has the same completion date. This approach also requires CIMRP to ensure that the completion date it enters is the final date, as opposed to interim dates for different project phases. Though we tried to minimize our own misinterpretation of the data, it is possible we identified a few data mismatches when in fact there were none.

When CIMRP adopted this system before the 2006 evaluation to ensure data in AMLIS match data in its files, it planned to make procedural changes to improve its project costs and accomplishments reporting. We did not focus on those individual changes, but the problems we found show, at a minimum, the need for improved quality control. We also noted that none of the PADs included priority documentation forms to support the priority designation. Though we recognize this evaluation addresses a reporting requirement and does not reflect on the success or cost efficiency of CIMRP's abandoned mine reclamation, we also recognize the requirement to update AMLIS. On May 30, 2007, CIMRP and OSM met to discuss the evaluation and work with AMLIS in an attempt to better identify the problems.

We recognize that problems inherent to the AMLIS database might have caused some of the data discrepancies. For example, when a user attempted to correct completion data, AMLIS sometimes entered numbers that have no relationship to the data being entered or corrected. That problem also might have involved the linked performance measures data.

We made a number of recommendations based on our evaluation. Four of them were related to the need for improved quality control and we recommended that CIMRP fully implement the procedural changes it planned to do that. We also recommended that CIMRP review the sample closeout reports and corresponding PADs and revise the data as needed. Further, we repeated our 2006 recommendation that CIMRP phase-out County-wide noncoal PADs and replace them with project-specific PADs as new noncoal projects are developed and funded. Last, we recommended that CIMRP complete priority documentation forms for all coal and noncoal PADs as required by OSM Directive AML-1 to support the priority designation.

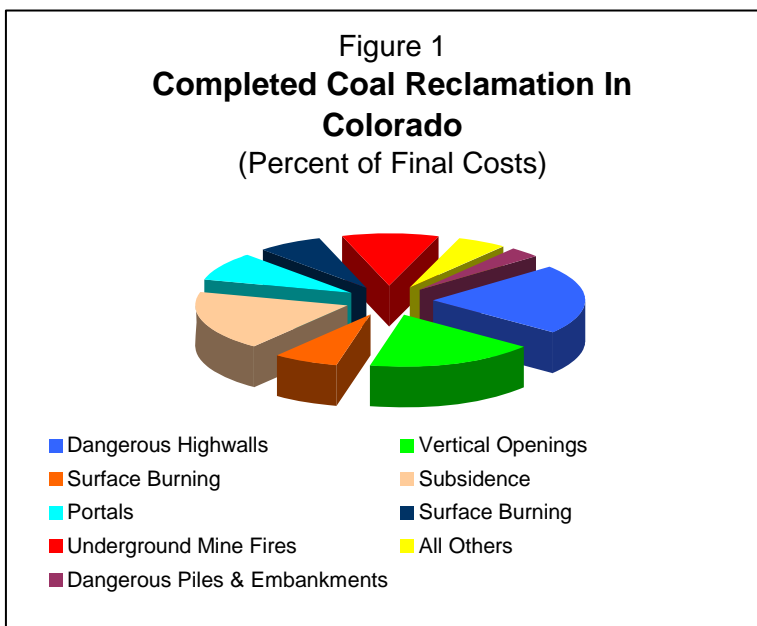
CIMRP responded to our recommendations on June 26, 2007. The Program noted it has been rewriting its internal business data system ("Brass Cap"). That effort has

taken longer than expected but cannot be hurried due to contracting issues and other Information Technology demands within DRMS and DNR. CIMRP also said it will stand by the comments it made in response to this evaluation in 2006 and will continue to work on issues raised in the 2006 and 2007 evaluations. The Program further noted that it is reviewing its project closeout procedures to improve reporting consistency and already implemented some changes. Also, CIMRP responded that it will begin phasing out County-wide noncoal PADs and replacing them with project-specific PADs as it develops and funds new noncoal projects.

V. Accomplishments and Inventory Reports

Title IV of SMCRA stresses reclamation of abandoned coal mine-related problems because active mining operations pay a fee on each ton of coal produced to generate the AMR Fund. CIMRP continues to reclaim abandoned coal mines but less frequently than it reclaims noncoal mines. Colorado has not yet certified that all coal problems have been addressed as provided by section 411 of the Act. OSM funds Colorado's noncoal reclamation upon request by the Governor under section 409(c) of SMCRA.

Colorado received funding to reclaim 180 coal projects since OSM approved the State's program on June 11, 1982. Of those, CIMRP completed 161 and cancelled six by the end of the 2007 evaluation period. Abating eighteen types of abandoned coal mine-related problems required over \$13.25 million from all sources since program approval. About 94.7 percent of the money Colorado spent on coal reclamation so far addressed eight types of problems. Those problem types and the percentage of final costs attributed to their funding include: Dangerous highwalls (22.3%); subsidence (19.1%); vertical openings (18.5%); underground mine fires (10.7%); portals (9.2%); surface burning (7.1%); gobs (4.3%); and dangerous piles and embankments (3.5%). Figure 1

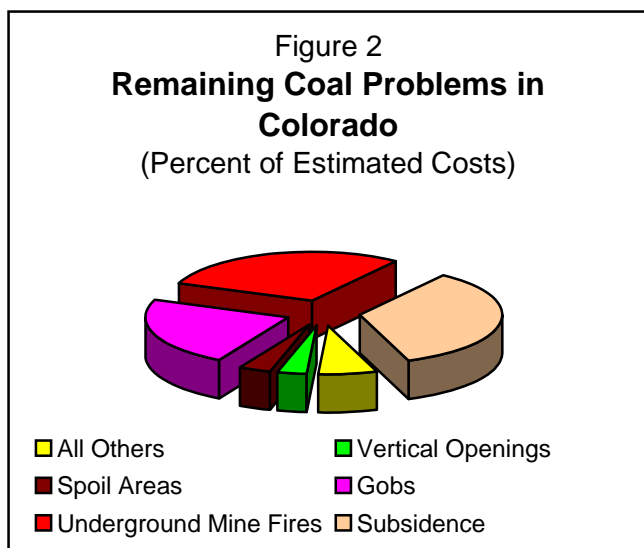


(right) illustrates these percentages. Abating ten other problem types required the remaining 5.3 percent of the total cost of completed coal reclamation. Appendix 1 shows the numbers of coal problems addressed and their final costs in more detail.

Each of the 26 grants OSM awarded to Colorado since 1982 requested funding for abandoned coal mine projects. The State's ongoing 2005, 2006, and 2007 grants include funding for three, four, and five coal projects, respectively. Completed coal-

related reclamation accomplishments funded from all sources that Colorado entered into AMLIS during the 2007 period included two safeguarded vertical openings. AMLIS was not updated by the end of the period to reflect reclamation the State completed on a coal fire project. During this period, CIMRP also began to monitor coal fires statewide in another project. Appendix 2 shows how AMLIS data changed during the 2007 evaluation year to reflect the State’s coal accomplishments and inventory updates. AMLIS data for this year also show that CIMRP funded reclamation of 25 acres of gob and eight acres of industrial / residential waste. Those data also show the State funded abatement of 24 and 28 vertical openings and portals, respectively, and abatement of five acres of surface burning and 53 acres of underground mine fires in the 2007 period. Appendix 1 shows those and other funded abandoned mine problems and costs in more detail.

Over \$36.86 million in unfunded coal problems remain in Colorado based on AMLIS data. That figure is an increase of \$10,000 since the end of the 2006 evaluation period. The increase reflects the estimated cost of abating one acre of unfunded subsidence.



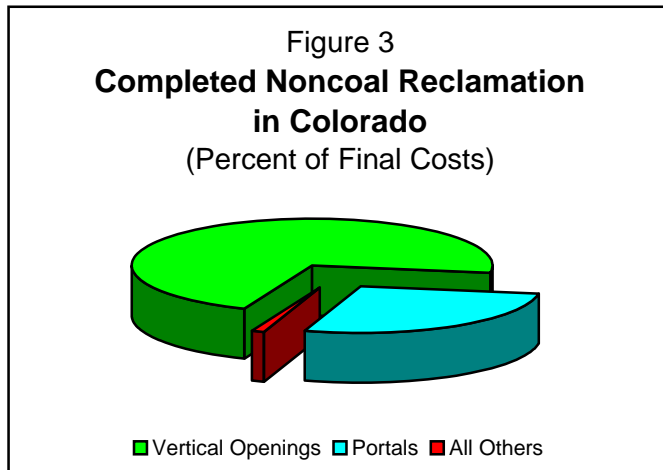
Appendix 2 shows this addition to the inventory. It also shows that CIMRP removed 80 vertical openings from its inventory of unfunded coal problems in AMLIS during this period, though estimated unfunded reclamation costs did not decrease with that change. Slightly more than 93 percent of the estimated cost of reclaiming those coal problems is associated with five problem types. Those problems and the percentages of estimated costs attributed to them include: Priority 1 and 2 subsidence (34.4% - almost all priority 2); priority 1 and 2 underground mine fires (29.2%); priority 3 gobs

(22.8%); priority 3 spoil areas (3.5%); and priority 1 and 2 vertical openings (3.4%). The remaining 7 percent of estimated costs is associated with 15 other problems types included as “all others” in Figure 2 (above left). Figure 2 is an illustrated comparison of these percentages. Compared to priority 1 and 2 problems, unfunded priority 3 coal problems pose environmental hazards that are just as important but somewhat less urgent. Appendix 1 shows all the remaining, unfunded coal problem types currently inventoried in Colorado and the estimated costs of their reclamation, based on AMLIS data. During our May 30, 2007, meeting, we discussed AMLIS data for Colorado’s remaining unfunded coal problems. We concluded that CIMRP needs to update AMLIS to remove some of those data because they show coal problems where the Program’s project managers believe none are likely to remain.

Despite the remaining coal problems described above, abandoned noncoal mines generally pose more serious and immediate hazards to public health and safety in

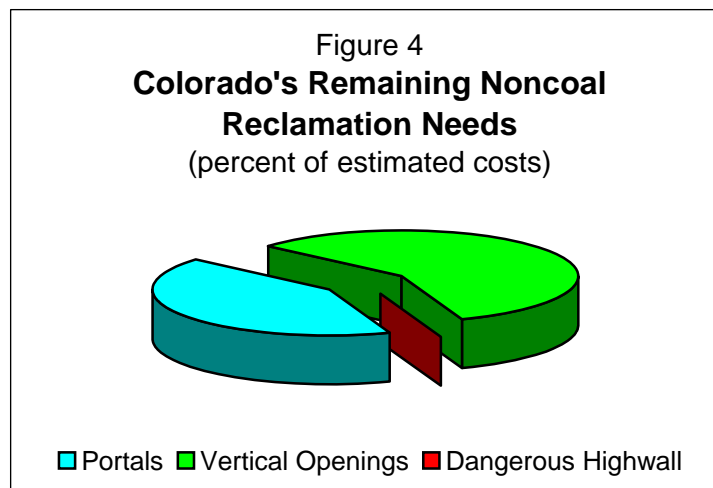
Colorado. CIMRP first requested funds for noncoal reclamation in its 1985 grant and received SMCRA grant funding to reclaim 221 noncoal projects since then. Of that total, 188 projects are complete and CIMRP cancelled four. Moreover, noncoal projects have dominated CIMRP's grants and reclamation for the past 12 years. Colorado's 2005, 2006, and 2007 grants requested funds for 12, 11, and 13 noncoal projects, respectively. The Program completed 3 noncoal projects and began work on six more that was ongoing at the end of the 2007 evaluation year.

CIMRP's abandoned noncoal mine reclamation cost over \$26.5 million in funding from all sources so far. That work abated hazards associated with abandoned noncoal mine



portals, vertical openings, hazardous equipment and facilities, gobs, pits, and subsidence. AMLIS data show CIMRP safeguarded at least 8,518 noncoal portals and vertical openings between 1985 and the end of the 2007 evaluation year. Figure 3 (left) compares the percent of total final costs attributed to safeguarded portals, vertical openings, and all other noncoal problems Colorado reclaimed. Safeguarding priority 1 portals and vertical openings required about 98.8 percent of the \$26.5

million-plus total cost of Colorado's completed noncoal reclamation. Additional noncoal problems grouped together as "all others" in Figure 3 include gobs, hazardous equipment and facilities, pits, and subsidence the State abated incidental to higher priority abatement work or with funds other agencies provided. Appendix 3 shows Colorado's completed noncoal reclamation accomplishments since 1985 in greater detail. It also shows that, as of June 30, 2007, CIMRP had funding to address an additional 128 portals, 105 vertical openings, and 1 acre of industrial / residential waste at a cost of about \$1,110,370.



Generally, priority 1 portals and vertical openings pose the most hazardous noncoal problems in the State. They make up about 99.9 percent of the estimated cost of abating the unfunded noncoal problems Colorado currently inventories in AMLIS. The remaining 0.1 percent of the estimated unfunded cost is associated with a priority 2 dangerous highway. Figure 4 (above right) illustrates the percentages that portals,

vertical openings, and the dangerous highwall comprise of Colorado's estimated unfunded noncoal reclamation costs.

Colorado includes data for most, but not all, of its abandoned noncoal mine problems in AMLIS. Data for unfunded noncoal problems in AMLIS are based on very preliminary County-wide inventory data and rough cost estimates. AMLIS data, therefore, are not a precise measure of the scope of Colorado's unfunded noncoal problems or estimated funding needs. On the other hand, CIMRP continues to revise AMLIS data to more accurately show its noncoal reclamation accomplishments. Transitioning from County-wide noncoal PADs to project-specific PADs as described in section IV.B of this report also would improve AMLIS data.

Appendix 1

Colorado Inactive Mine Reclamation Program

Coal Reclamation Accomplishments Since June 11, 1982, and Remaining Reclamation Needs*

Problem Type and Description	Unfunded		Funded		Completed		Total	
	Units	Costs	Units	Costs	Units	Costs	Units	Costs
Bench	55 acres	\$197,000	0	0	2.5 acres	\$27,920	57.5 acres	\$224,290
Dangerous Highwalls	1,030 feet	\$30,000	0	0	51,992 feet	\$2,955,885	53,022 feet	\$2,985,885
Dangerous Piles & Embankments	0	0	0	0	43.5 acres	\$468,050	43.5 acres	\$468,050
Equipment & Facilities	62 (count)	\$94,000	0	0	7 (count)	\$14,657	69 (count)	\$108,657
Gobs	457.3 acres	\$8,416,954	25 acres	\$205,753	87.5 acres	\$576,669	569.8 acres	\$9,199,376
Highwall	0	0	0	0	1,175 feet	\$41,386	1,175 feet	\$41,386
Hazardous Equipment & Facilities	1 (count)	\$2,000	0	0	1 (count)	\$1	2 (count)	\$2,001
Haul Road	4 acres	\$13,000	0	0	0	0	4 acres	\$13,000
Industrial / Residential Waste	3 acres	\$13,000	8 acres	\$84,000	15 acres	\$106,657	26 acres	\$203,657
Mine Openings	212 (count)	\$631,000	3 (count)	\$3,206	18 (count)	\$62,592	233 (count)	\$696,798
Other	26.0	\$101,000	0	0	0	0	26.0	\$101,000
Portals	32 (count)	\$136,060	29 (count)	\$86,736	543 (count)	\$1,223,460	604 (count)	\$1,446,256
Pits	93 acres	\$423,100	0	0	61.9 acres	\$233,584	154.9 acres	\$656,684
Polluted Water: Agric. & Industrial	0	0	1 (count)	\$50,000	3 (count)	\$19,699	4 (count)	\$69,699
Subsidence	179.6 acres	\$12,691,460	0	0	61.9 acres	\$2,529,376	231.5 acres	\$15,230,836
Spoil Area	365.6 acres	\$1,286,095	2 acres	\$25,000	97.5 acres	\$183,502	465.1 acres	\$1,494,597
Surface Burning	1 acre	\$5,000	5 acres	\$70,000	29.2 acres SMCRA ; 42 acres all sources	\$500,828 SMCRA; \$935,165 all sources	35.2 acres SMCRA; 48 acres all sources	\$575,828 SMCRA; \$1,010,165 all sources
Slump	25 acres	\$804,000	0	0	0	0	25 acres	\$804,000
Underground Mine Fire	176.5 acres	\$10,750,000	53 acres	\$2,955,532	182 acres	\$1,413,817	411.5 acres	\$15,119,349
Vertical Openings	38 (count)	\$1,239,967	24 (count)	\$138,895	298 (count)	\$2,456,882	360 (count)	\$3,835,744
Water Problems	24 gal/min	\$22,000	1 gal/min	\$25,000	1 gal/min	\$6,000	26 gal/min	\$53,000
COLORADO TOTAL COSTS		\$36,865,636		\$3,644,122		\$12,820,335 SMCRA; \$13,254,672 all sources		\$53,330,093 SMCRA; \$53,764,430 all sources

* This table is based on a Problem Type Unit and Cost Summary Report from the Abandoned Mine Land Inventory System as of July 19, 2007. "All sources" of funding exclude the Federal Emergency Program.

NOTE: Completed cost of \$1 means that problem type's reclamation was incidental to reclamation of another problem type.

Appendix 2

Colorado Inactive Mine Reclamation Program

Coal Reclamation Accomplishments and Inventory Changes in the 2007 Evaluation Year

Problem Type and Description	Unfunded		Funded		Completed		Total	
	Units	Costs	Units	Costs	Units	Costs	Units	Costs
Subsidence	+ 1 acre	+\$10,000					+1 acre	+\$10,000
Underground Mine Fires			+4 acres	+\$180,000			+4 acres	+\$180,000
Vertical Openings	-80 (count)		+2 (count)	+\$28,000	+2 (count)		-76 (count)	+\$28,000

* This table is based on a comparison of Problem Type Unit and Cost Summary Reports from the Abandoned Mine Land Inventory System as of July 5, 2006, and July 19, 2007. Coal accomplishments and costs shown are the same whether reported as SMCRA-funded only or as funded by all sources.

Appendix 3

Colorado Inactive Mine Reclamation Program

Noncoal Reclamation Accomplishments Since June 11, 1982, and Remaining Reclamation Needs*

Problem Type and Description	Unfunded		Funded		Completed		Total	
	Units	Costs	Units	Costs	Units	Costs	Units	Costs
Dangerous Highwalls	1.0	\$5,000	0	0	0	0	1.0 foot	\$5,000
Gobs	0	0	0	0	3 acres	\$78,250	3 acres	\$78,250
Hazardous Equipment & Facilities	0	0	0	0	13 (count)	\$214,669	13 (count)	\$214,669
Industrial/Residential Waste	0	0	1 acre	\$20,000	0	0	1.0 acre	\$20,000
Portals	3,636 (count)	\$18,696,807	97.5 (count)-SMCRA; 127.5 (count)-all sources	\$418,303-SMCRA; \$723,813-all sources	2,547.5 (count) SMCRA; 2,684.5 (count) all sources	\$7,169,934-SMCRA; \$7,285,971 - all sources	6,274 (count) SMCRA; 6,441 (count) all sources	\$26,249,297 - SMCRA; \$26,670,844 all sources
Pits	0	0	0	0	2 acres	\$12,000	2 acres	\$12,000
Subsidence	0	0	0	0	2 acres	\$10,000	2 acres	\$10,000
Vertical Openings	4,423.5 (count)-SMCRA; 4,958.5 (count)-all sources	\$23,077,464 -SMCRA; \$25,748,964 -all sources	98.5 (count)-SMCRA; 105 (count)-all sources	\$342,611-SMCRA; \$366,557-all sources	3948 (count) SMCRA; 4,570 (count) all sources	\$16,202,677 - SMCRA; \$18,917,676 - all sources	8,470 (count)-SMCRA; 9,633.5 (count)-all sources	\$39,622,752 - SMCRA; \$45,033,197 - all sources
COLORADO TOTAL COSTS		\$41,779,271 -SMCRA; \$44,450,771 -all sources		\$780,914-SMCRA; \$1,110,370 -all sources		\$23,687,530 - SMCRA; \$26,518,566 - all sources		\$66,211,968 - SMCRA; \$72,043,960 - all sources

* This table is based on a Problem Type Unit and Cost Summary Report from the Abandoned Mine Land Inventory System as of July 19, 2007. AMLIS does not include a complete inventory of Colorado's unfunded noncoal problems.

Appendix 4

State Comments on the Report

From: Pineda, Loretta [Loretta.Pineda@state.co.us]
Sent: Thursday, September 06, 2007 7:44 AM
To: Ronald Sassaman
Cc: James Fulton
Subject: Comments
Ron

Thank you for the opportunity to comment on the 2007 Annual Summary Evaluation Report for the Colorado Inactive Mine Reclamation Program. The team and work group process that we have with the Office of Surface Mining and the Utah AML Program has provided us with a very thorough oversight process. The field and office administrative review provides a good balance for evaluating program activities. Oversight has been done in a thoughtful way and problems are solved in a collaborative setting that encourages feedback and follow through. Your guidance has played a big role in that I want to thank you.

This year's summary again highlights the problems that Colorado has with AMLIS. While Colorado's program needs to make significant inroads into managing this database; we must also recognize the current state of AMLIS and on-going challenges and problems that occur with this database that are also a responsibility of OSM. The reports generated by AMLIS must be taken into this context. AMLIS is not an accurate reporting tool for Colorado's program. Given the diversity in program activities and funding the AMLIS database does not conform. I know that the team is committed to accurate reporting and providing good data on both AML problems and accomplishments, I look forward to working with the team to meet this goal.

Loretta E. Pineda

Division of Reclamation, Mining and Safety

1313 Sherman Street, Room 215

Denver, CO 80203

303-866-3819 -- office

303-257-2501 -- cell

303-832-8106 -- FAX

loretta.pineda@state.co.us