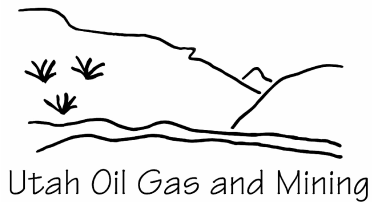


**ANNUAL SUMMARY EVALUATION REPORT**  
**of the**  
**COLORADO - UTAH ABANDONED MINE LAND REVIEW TEAM**  
**for the**  
**UTAH ABANDONED MINE RECLAMATION PROGRAM**  
**for**  
**EVALUATION YEAR 2000**

(October 1, 1999 through September 30, 2000)



November 9, 2000

TABLE OF CONTENTS

I. Introduction ..... 1

II. General Information on the Utah Program ..... 1

III. Noteworthy Accomplishments ..... 2

IV. Results of Enhancement and Performance Reviews ..... 4

V. Accomplishments and Inventory Reports ..... 8

Table 1  
Coal AML Reclamation Accomplishments and Remaining Reclamation Needs .... 11

Table 2  
Noncoal AML Reclamation Accomplishments and Remaining Reclamation Needs . . 12

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)
- DOGM - Division of Oil, Gas and Mining (of the Utah Department of Natural Resources)
- EPA - United States Environmental Protection Agency
- MSHA - Mine Safety and Health Administration (of the U. S. Dept. of Labor)
- OSM - Office of Surface Mining (of the U. S. Dept. of the Interior)
- SMCRA - Surface Mining Control and Reclamation Act of 1977
- USFS - Forest Service ( of the U.S. Department of Agriculture)

## **I. INTRODUCTION**

Title IV of the Surface Mining Control and Reclamation Act of 1977 (SMCRA) established the Abandoned Mine Reclamation Fund. The primary purpose of the fund is to mitigate the effects of past mining. The Office of Surface Mining Reclamation and Enforcement (OSM) administers the Abandoned Mine Reclamation Fund on behalf of the Secretary of the Interior. OSM awards grants to States and Tribes from the Fund to reclaim abandoned mines and to pay their administration costs. The program puts the highest priority on correcting the most serious abandoned mine land (AML) problems endangering 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.

Directive AML-22 generally describes how OSM evaluates State and Tribal AML reclamation programs. It calls such evaluations AML enhancement and performance reviews. A joint State/Federal team, called the Colorado-Utah AML Review Team, has been completing these reviews of the Utah Abandoned Mine Reclamation (AMR) Program and the Colorado Inactive Mine Reclamation Program (CIMRP) since its inception in January 1996. The team includes representatives of the Utah AMR Program, CIMRP, and OSM's Denver Field Division (DFD). Members of the team during the 2000 evaluation period included: Frank Atencio, Grants Management Specialist, OSM-DFD; Dave Bucknam, CIMRP Supervisor, Colorado DMG; Mark Mesch, Administrator, Utah AMR Program; and Ron Sassaman, Environmental Protection Specialist, OSM-DFD. This report summarizes our review and evaluation of the Utah AMR Program for evaluation year 2000.

## **II. GENERAL INFORMATION ON THE UTAH PROGRAM**

On June 3, 1983, the Secretary of the Interior approved Utah's AML reclamation plan ( State Reclamation Plan ) under Title IV of the Surface Mining Control and Reclamation Act (SMCRA). This approval allows Utah to reclaim abandoned mines in the State in non-emergency AML projects. The AMR Program of the Division of Oil, Gas and Mining (DOGMA) in the Department of Natural Resources, administers Utah's AMR Program. The Denver Field Division of OSM's Western Regional Coordinating Center works with the AMR Program to fund and approve AML projects in Utah 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. Grants OSM awards to the Utah AMR Program are based on the period of July 1<sup>st</sup> through June 30<sup>th</sup>. Because the *evaluation* year (on which this report is based) includes the period of October of one year through September of the following year, Utah's grants span parts of two successive evaluation periods. While the administration funding in those grants applies to a single year, their construction funding is available for three

years. In 1999, OSM awarded a grant to the AMR Program in the amount of \$1,576,544. That grant funded construction and related activities for one coal and two noncoal projects as well as coal and noncoal project maintenance. It also funded engineering, design, and various surveys for one coal fire engineering project and five additional noncoal projects. Additionally, the 1999 grant funded the Program's administrative activities and staffing of nine positions. In 2000, OSM awarded \$1,666,000 in a grant to the AMR Program. The 2000 grant funds program administration and supports nine positions. It also funds construction-related costs for three noncoal projects and a coal maintenance project and pays for costs of engineering, design, and various surveys for another three noncoal projects. Tables 1 and 2 show Utah's AML reclamation accomplishments and remaining reclamation needs based on data from the Abandoned Mine Land Inventory System.

Utah does not have OSM-approved subsidence insurance protection or emergency coal reclamation programs.

### **III. NOTEWORTHY ACCOMPLISHMENTS**

Public awareness of hazards associated with abandoned mines is effective in preventing and reducing accidents involving abandoned mines. The Utah AMR Program participated in a number of activities to increase public awareness of AML hazards during this evaluation period. Two AMR Program employees attended the Sevier Valley Natural Resources Fair in Richfield and the Utah Boy Scout Expo Jamboral in Grantsville, Utah, where they staffed booths and distributed promotional items emphasizing abandoned mine safety. On March 14, 2000, one staff member also participated in a Denver regional kick-off session of the Mine Safety and Health Administration's Mine Hazard Awareness Campaign 2000, appropriately named *Stay Out-Stay Alive*. Promotional items were available at the meeting for participating State and Federal agencies to use in their own AML hazard awareness activities. Campaign 2000 ran from April 16<sup>th</sup> through the 30<sup>th</sup> in conjunction with Earth Day Activities. A Utah staff member gave AML project updates and field tours to the Canyon Country Partnership and the Emery County Public Lands Council. Also, two AMR Program employees attended meetings of the Piute and Beaver County Commissions to discuss upcoming reclamation projects, and other staff held public meetings in Washington County prior to another AML project. The AMR Program also staffed an information booth at the Conservation Day function sponsored by the Utah Department of Natural Resources.

Another aspect of the Utah AMR Program's efforts to increase awareness of AML hazards includes producing materials that can be distributed to different segments of the public. For example, the Program distributed free promotional items everywhere it staffed its mobile booth, as described above. Its ongoing AML safety awareness campaign also included printing 26,000 workbooks and distributing 30,377 workbooks to 461 public schools and 31 private schools for use by fourth-grade students. The Program made another 133 copies of the safety video *Stay Out and Stay Alive* for

distribution. Finally, the AMR Program continued to work with the Utah Mining Heritage Alliance to develop an interpretive brochure highlighting the historical significance of different types of mining throughout the State.

Utah's AMR Program continued to develop mine reclamation partnerships with Federal agencies and other organizations during the 2000 evaluation year. Federal agencies that include the National Park Service (NPS) and the Bureau of Land Management (BLM) in the U.S. Department of the Interior and the Forest Service (USFS) of the U.S. Department of Agriculture provide project funding and inventory assistance and information to the AMR Program. The Program coordinated its work to inventory AML hazards on public lands with the BLM and USFS. It also partnered with the United States Environmental Protection Agency (EPA) and NPS to sample uranium mine waste dumps in Canyonlands National Park. AMR Program staff members conducted field assessments of two noncoal project areas for NPS in the Glen Canyon National Recreation Area. Two of its staff also conducted field assessment of another noncoal project area in partnership with the BLM and the Nature Conservancy.

The AMR Program also continued its involvement with the Cottonwood Wash project in southeastern Utah. The AMR Program Administrator and the Program's Biologist are members of the technical committee formed to plan this project and bring it to fruition. Cottonwood Wash is the third pilot project selected in conjunction with the Interdepartmental Abandoned Mine Lands Watershed Cleanup Initiative. In 2000, DOGM worked with the BLM, USFS, the Utah Department of Environmental Quality's Division of Water Quality, the EPA, the Bureau of Indian Affairs, and the Oak Ridge National Laboratory primarily to collect and analyze data and to develop the specific proposed action for this project under the National Environmental Policy Act. Cottonwood Canyon is located in an area noted for an abundance of cultural resources and interacting and overlapping jurisdictions and interests. Though the planning process has been time consuming, complex, and difficult, notable progress has been made and construction tentatively is planned for early 2001. Once construction begins, DOGM's role will include closing pre-law abandoned vertical openings and portals with SMCRA funds awarded by OSM and providing contract administration and construction monitoring services. The BLM and USFS will devote their efforts to project planning and watershed remediation.

Utah also continued to protect bats and their habitat through its construction of special mine closures and cooperation with bat conservation programs. Utah's AMR Program is one of several State and Tribal AML programs that promote bat conservation as an integral part of abandoned mine reclamation. The AMR Program Administrator played a central role in developing the bat conservation and mining interactive technical forum that will take place in St. Louis, Missouri in mid-November 2000, and will chair a session of that forum. During our 2000 field review of performance measure 1(b) summarized under Part III A. of this report, we viewed one of many grate closures Utah built to provide bat access to underground mine workings. This particular closure was one of the first Utah built specifically to preserve bat habitat. The Program completed

this closure in 1992 and it still is intact and functional. Such closures enable bats (and occasionally other wildlife species) access to important habitat while safeguarding mine openings against public entry.

#### **IV. RESULTS OF ENHANCEMENT AND PERFORMANCE REVIEWS**

Our team signed the Colorado-Utah AML Review Team Performance Agreement on February 3, 1998. The performance agreement describes the team's purpose, team members' responsibilities, and three general principles of excellence that the team developed to review and evaluate the Colorado and Utah AML programs' performance. The agreement applies to the 1998, 1999, 2000, 2001, and 2002 evaluation years. However, we update the agreement each year with current-year schedules and to indicate which principles of excellence and performance measures we plan to review. We also update the performance measures to specify any particular aspects of the programs that we plan to focus on.

We emphasized on-the-ground or end-results when we developed the principles and measures in the agreement. Each principle of excellence has one or more performance measure(s). Each performance measure is one specific topic within a general principle of excellence. We decide which performance measures to review and evaluate in a particular year. Performance measures describe the following: Why we selected that topic; what the review population and sample sizes will be; how we will conduct the review and report the results; and our schedule for completing the review. The two principles of excellence, and the specific performance measures we chose for the 2000 review of the Utah AMR Program, are described below.

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 3: The State must have systems to properly manage AML funds.

" *Performance Measure (e)*: Are the costs of State AML program activities appropriately documented and supported?

Results of our 2000 review and evaluation are summarized below. These summaries are based on information we gathered. Evaluations included field visits to AML projects, interviews with AMR Program and DOGM staff, and reviews of the AMR Programs' project specifications. We described our review and evaluation results in much greater detail in enhancement and performance review reports that we wrote for each performance measure. Those reports are on file in OSM's Denver Field Division. This report, and the supporting enhancement and review reports, describe our reviews and evaluations of performance measures 1(b) and 3(e).

## A. Summary Evaluation of Performance Measure 1(b)

The team's evaluation of this performance measure determined whether Utah's completed reclamation is successful on a long-term basis. For the purpose of this review, we defined long-term reclamation as any project completed more than three years prior to the revised performance agreement. We also agreed to focus on coal projects. The Utah AMR Program reclaimed 46 coal projects from the time the Secretary approved its program effective June 3, 1983, to the date of the team's 2000 evaluation. As a result, the 2000 review population was every project the Utah AMR Program reclaimed before December 1996, which totaled 42 projects. The review sample included 12 coal projects reclaimed from 5 years to 16.4 years ago, with an average age of 10.4 years for the reclaimed projects we viewed.

Our evaluation concluded that long-term reclamation of the projects we visited was successful overall. We based our conclusion on two basic factors. First, we considered if specific measures the Utah AMR Program prescribed to abate hazards were intact and functional. Second, we considered whether reclamation the State completed more than three years ago (i.e., long-term by our definition) continued to improve restored areas over their previously abandoned condition as shown on maps and in photographs taken before reclamation. Though we focused on evaluating the AMR Program's methods of constructing mine closures and reclaiming coal waste piles, we also incidentally reviewed the Program's abatement of hazards such as dangerous piles or embankments and hazardous equipment or facilities. We looked for specific problems while empirically evaluating overall site conditions. As we walked each area, we noted whether problem features shown on project maps and in specifications were evident. If they were not evident, we concluded that measures used to abate them were intact and functional. If problems were evident, we determined if they were among the hazards originally included in the specifications or if they occurred since the AMR Program completed reclamation. Next, we decided if any problems we found were hazardous or not and if maintenance was needed to correct them. Considering these factors, we then decided whether reclamation continued to improve the project areas over their previously abandoned condition.

We looked at 23 mine closures. They included backfill closures, concrete block walls, walls built of native stone, and one bat grate. Of the 23 closures we viewed, 22 were intact and functional for an excellent long-term success rate of 95.6 percent. One backfill closure was compromised by subsidence and was hazardous again. Utah's AMR Program built this closure about 16.4 years ago. We also found another case where subsidence occurred adjacent to an intact block wall closure the State completed about 9.6 years ago, and agreed that it was potentially hazardous. Our team recommended that the Utah AMR Program follow-up on our findings by performing maintenance at these two locations.

Reclamation of coal waste material was successful at 12 of the 18 coal waste piles we visited at seven different projects, for a long-term success rate of 67 percent. The

waste piles involved in this part of our evaluation were reclaimed from 5 years to 16.4 years ago. We noted where Utah successfully used surface roughening to enhance water retention and revegetation, resulting in excellent shrub growth and erosion control. We observed shrub exclosures constructed to protect vegetation from wildlife and livestock grazing. Other revegetation efforts we noted included construction of shrub islands on one urban waste area and planting willow cuttings to successfully augment riparian vegetation along a perennial river.

Of the six locations where Utah's coal waste reclamation was unsuccessful, only one needed maintenance. In that case, overall reclamation of the project area appeared to be very successful, especially considering it was reclaimed 16.4 years ago in one of the AMR Program's earliest projects. However, a ripped drainage was subjected to two back-to-back precipitation events of 500-year magnitude and sustained severe erosion damage. We recommended that Utah correct the problem, and note that the AMR Program already included it in a maintenance project funded in its 2000 grant from OSM.

Unsuccessful reclamation associated with the remaining five coal waste piles involved Utah's experimental attempts to establish vegetation in the absence of topsoil. In four cases, the State experimented with direct seeding into coal waste, followed by fertilizing and covering with erosion control blanket. In the fifth case, Utah transplanted Indian ricegrass plants from another project area directly into coal waste material. Where erosion control blanket was used, the plastic netting remained intact in most places but the fibrous material in it appeared to have completely decomposed. We noted no appreciable accumulation of leaf or other organic litter on those piles, despite the passage of considerable time since reclamation. In the case where ricegrass transplants were used, they did not survive, most likely due to wildlife and livestock grazing. In that case, however, we found that the site supported very good volunteer shrub growth. Though we concluded that the Utah AMR Program's experimental direct seeding and planting of coal waste in the absence of a cover soil was unsuccessful, we also found that none of those coal waste piles appeared to be eroding, otherwise unstable, or contributing to any problems on-site or off that we could determine. Nevertheless, we recommended that the Utah AMR Program reflect on the factors that might have caused its experimental reclamation of bare coal waste to be unsuccessful. In that context, we recognized that erosion control netting, transplanting, and direct seeding are effective reclamation tools when used under favorable conditions.

We also concluded that reclamation we observed continued to be a long-term improvement compared to the abandoned conditions the sites were left in before the Utah AMR Program reclaimed them. We reached this conclusion notwithstanding the cases we found where maintenance is needed to correct hazardous or potentially hazardous conditions that occurred since Utah completed reclamation. We reasoned that, by closing mine openings, backfilling highwalls, removing haulroads and hazardous structures, and eliminating coal waste as a source of stream sedimentation, the AMR Program removed public safety and environmental problems. By their very



nature, those hazards and problems made the land or water unsafe or less suitable for use by people and wildlife. In addition, by establishing shrubs and riparian vegetation, promoting surface water retention and revegetation in general, and preserving or improving wildlife habitat, Utah restored various natural resource values to reclaimed abandoned mine lands. In this context, Utah's long-term reclamation was successful because it improved the condition of the projects we visited.

#### B. Summary Evaluation of Performance Measure 3(e)

Our evaluation of this performance measure determined if the costs of the Utah AMR Program's activities are appropriately documented and supported. This is a fundamental accounting concept that ensures supporting documentation is adequate to demonstrate that claimed costs are proper expenditures of AML funds. The Utah Division of Oil, Gas and Mining includes three sub-divisions: Administration; Oil and Gas Conservation; and Mining. The Mining sub-division is made up of three programs, including the Abandoned Mine Reclamation, Coal Regulatory, and the Minerals Regulatory Programs. We looked at records and transactions pertaining to the AMR Program's accounts.

We interviewed a State staff member of the Administration sub-division who is responsible for AML transactions involving grants awarded by OSM. Our review concentrated on transactions that occurred during fiscal year 1999. In some cases, we reviewed transactions that occurred since that time because some information from fiscal year 1999 was dosed and archived and would have been difficult to retrieve. Records we reviewed of sample transactions included the FI-NET Chart of Accounts, the AM62 Federal grants tracking report, and supporting source documents such as employee time sheets and travel logs. We also looked at journal entries and program ledgers to determine if transactions and their expenditures are properly charged to the AMR Program. The team sampled and discussed various object class categories that are listed in the AML grant application to determine how Utah tracks funds for particular cost categories.

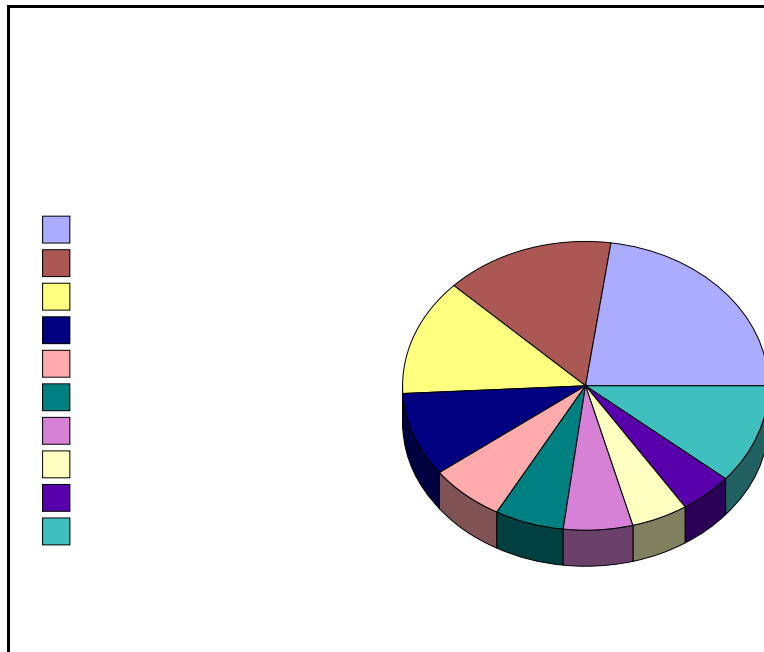
We concluded that the costs of the Utah AMR Program's activities are appropriately documented and supported. Our review found no circumstances that would lead us to recommend corrective actions. DOGM has a good system to identify and account for transactions that involve OSM grant funds. Account classification methods that identify activities and costs cross-correlate within various other reports and ledgers the State maintains. Utah keeps AML account records current and complete, and we found the flow of funds easy to follow. We believe adequate safeguards are in place to prevent waste, loss, or unauthorized use of property and supplies purchased with OSM grant funds. Utah's system of internal controls is excellent and prevents mixing OSM grant funds between DOGM's Coal Regulatory Program and the AMR Program and with other Department of Natural Resources accounts. Additionally, the State satisfactorily maintains pertinent documents and source records. We also believe there are sufficient safeguards for approving and authorizing transactions because only the

Division Director, the Associate Director of Mining, the AMR Program Administrator and the Grants Coordinator are allowed to sign for AML purchases and transactions. We further conclude that AML transactions are properly recorded and classified.

## V. ACCOMPLISHMENTS AND INVENTORY REPORTS

Tables 1 and 2 list the abandoned coal and noncoal problems Utah included in the Abandoned Mine Land Inventory System (AMLIS) and how many of those problems the AMR Program reclaimed so far. The tables also show the estimated reclamation costs of unreclaimed coal and noncoal problems and how much Utah's completed coal and noncoal reclamation cost.

Title IV of SMCRA stresses reclamation of abandoned coal mine-related problems because the Abandoned Mine Reclamation Fund is generated by a fee assessed on the production of active coal mines. As of the date of this report, the Utah AMR Program completed reclamation of 48 coal projects since the Secretary approved its program effective June 3, 1983, and has funding to reclaim two more. About 89.1 percent of the \$9.16 million-plus cost of reclaiming those projects involved nine problems types. They include: Dangerous piles and embankments (23%); surface burning (14.9%); portals (13.2%); gobs (9.2%); hazardous equipment and facilities (6.7%); underground mine fires (6.2%); clogged stream lands (6%); clogged streams (5%); and dangerous highwalls (4.9%). Sixteen other types of problems make up the remaining 10.9 percent of the Utah AMR Program's completed abandoned coal mine reclamation. Figure 1 below shows the Program's abandoned mine-related reclamation accomplishments.



Utah continues to receive funding to reclaim abandoned coal mines and has not certified under section 411(a) of SMCRA that it addressed all its known abandoned coal mine problems. As Table 1 shows, over \$24.48 million in unreclaimed problems are included in the State's inventory of coal hazards in AMLIS. Approximately 94.9 percent of that estimated costs is associated with four problems, including: Underground mine fires (82.8%); subsidence (6.2%); dangerous highwalls (3.8%); and hazardous and explosive gases (2.1%). DOGM has been monitoring a number of underground mine fires over the years. With funding awarded in its 1994 grant, Utah developed an analysis method to measure fire temperature, fire atmosphere gases, and subsidence in addition to a field protocol that it will use to monitor fires throughout the State. Utah's 1996 grant funded the first field sampling in a project designed to: Establish baseline inventory information for each fire; develop a long-term monitoring plan to assess the condition and progress of the State's underground mine fires; implement a monitoring program; and develop initial mitigation proposals for consideration in a future grant. Experience shows that subsidence and underground mine fires are two of the most expensive and technically difficult abandoned coal mine problems to deal with effectively. Figure 2 below further illustrates the scope of Utah's remaining abandoned coal mine problems.

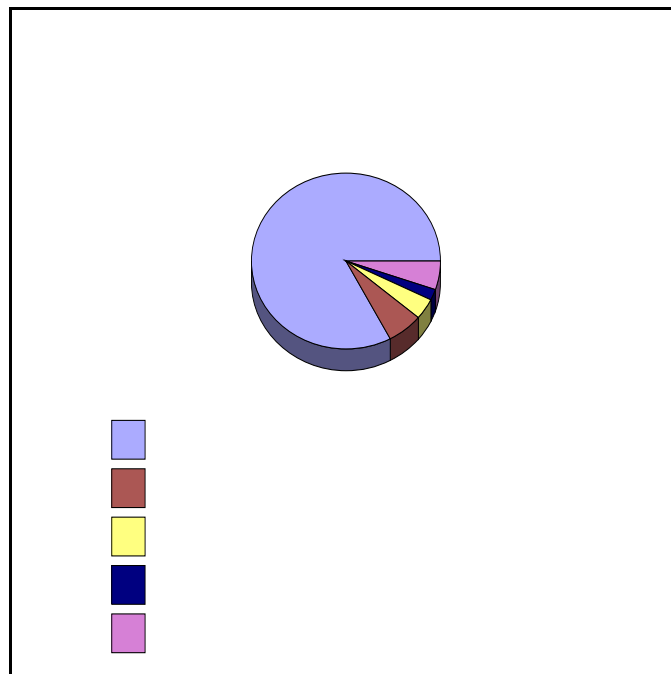


Table 2 summarizes the noncoal problems Utah inventoried and the State's noncoal reclamation accomplishments. Despite the AMR Program's efforts over the years to address the highest priority hazards, abandoned noncoal problems still number in the thousands and are found throughout the entire State. The Program estimates that about \$3.39 million are needed to reclaim the noncoal hazards remaining in Utah. Portals, vertical openings, and dangerous highwalls constitute 100 percent of that

estimated cost. Because these abandoned mine features are so numerous and widespread, they pose an immediate and extreme hazard to public health and safety. Urban sprawl, people moving to Utah from other States, increasing interest in outdoor recreation on public lands in historic mining districts, and the trend for many winter sports to concentrate in historically mined areas (among them the 2002 Winter Olympics) combine to make abandoned noncoal mines and their attendant features increasingly hazardous.

The Utah AMR Program continues to respond to the noncoal threat by reclaiming abandoned noncoal mine projects. To date, OSM has funded 28 noncoal projects in grants awarded to the AMR Program. The Program completed reclamation of 19 noncoal projects so far. Table 2 shows that Utah's completed reclamation addressed dangerous piles and embankments, hazardous equipment and facilities, portals, subsidence, and vertical openings at a cost of over \$4.62 million. In terms of mine openings alone, the Utah AMR Program has closed 2,183 portals and vertical shafts at abandoned noncoal mines. Figure 3 below illustrates the percentage each category of inventoried, unreclaimed noncoal problem comprises of Utah's estimated unfunded reclamation costs. It also shows how much the Program's completed reclamation of the same type of noncoal problems cost so far.

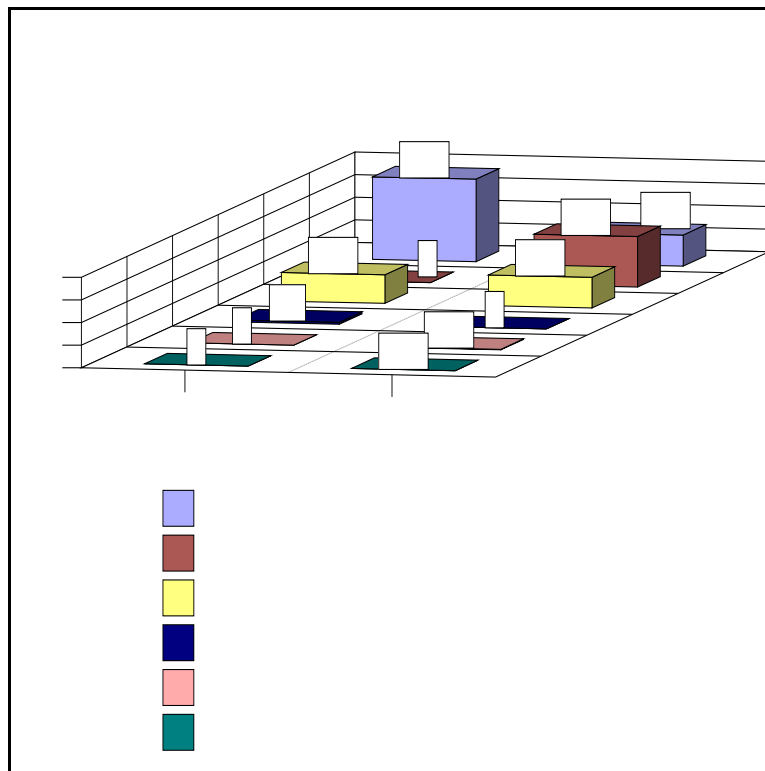


Table 1  
Utah Abandoned Mine Reclamation Program  
**Coal Reclamation Accomplishments and Remaining Reclamation Needs\***

Problem Type and Description	Unfunded		Funded		Completed		Total	
	Units	Costs	Units	Costs	Units	Costs	Units	Costs
Bench	8.0 acres	\$12,500	0.0	0	4.0 acres	\$154,544	12.0 acres	\$167,044
Clogged Streams	0.2 mile	\$10,000	0.0	0.0	14.1 miles	\$455,376	14.3 miles	\$465,376
Clogged Stream Lands	11.0 acres	\$281,000	6.0 acres	\$525,000	9.0 acres	\$546,126	26.0 acres	\$1,352,126
Dangerous Highwalls	5,000.0 feet	\$970,000	0.0	0	3,425.0 feet	\$444,871	8,425.0 feet	\$1,414,871
Dangerous Impoundments	0 (count)	0	0	0	1(count)	\$14,600	1 (count)	\$14,600
Dangerous Piles & Embankments	3.2 acres	\$81,000	0.0	0	136.0 acres	\$2,113,096	139.2 acres	\$2,194,096
Dangerous Slides	1.0 acre	\$20,000	0.0	0	0.0	0	1.0 acres	\$20,000
Equipment & Facilities	14 (count)	\$19,300	0	0	64 (count)	\$47,850	78 (count)	\$67,150
Gases: Hazardous/Explosive	13 (count)	\$536,000	0	0	19 (count)	\$20,001	32 (count)	\$556,001
Gobs	45.0 acres	\$134,500	0.0	0	255.0 acres	\$846,349	300.0 acres	\$980,849
Highwall	0.0	0	0.0	0	550.0 feet	\$1	550 feet	\$1
Hazardous Equipment & Facilities	15 (count)	\$175,500	0	0	152 (count)	\$613,933	167 (count)	\$789,433
Haul Road	0.5 acre	\$5,000	0.0	0	3.0 acres	\$35,000	3.5 acres	\$40,000
Industrial/Residential Waste	5.0 acres	\$22,000	0.0	0	9.0 acres	\$76,800	14.0 acres	\$98,800
Portals	42 (count)	\$151,800	8 (count)	\$1	498 (count)	\$1,212,327	548 (count)	\$1,364,128
Pits	3.0 acres	\$900	0.0	0	8.0 acres	\$23,266	11.0 acres	\$24,166
Polluted Water: Agric. & Industrial	1 (count)	\$50,000	0	0	2 (count)	\$54,700	3 (count)	\$104,700
Subsidence	183.0 acres	\$1,575,000	1.0 acres	0	3.0 acres	\$104,739	187.0 acres	\$1,679,739
Spoil Area	28.3 acres	\$174,034	0.0	0	55.0 acres	\$264,484	83.3 acres	\$438,518
Surface Burning	6.0 acres	\$150,000	0.0	0	38.8 acres	\$1,368,636	44.8 acres	\$1,518,636
Slurry	0.0	0	0.0	0	1.0 acre	\$2,830	1.0 acre	\$2,830
Slump	7.0 acres	\$16,000	0.0	0	16.0 acres	\$24,143	23.0 acres	\$40,143
Underground Mine Fire	326.0 acres	\$21,095,100	10.0 acres	\$250,000	27.0 acres	\$49,243	363.0 acres	\$21,915,498
Vertical Openings	1 (count)	\$2,433	0	0	23 (count)	\$49,243	24 (count)	\$51,676
Water Problems	1.5 gal/min	\$4,500	0.0	0	20.3 gal/min	\$117,085	21.8 gal/min	\$121,585
<b>UTAH TOTAL COSTS</b>		\$25,486,567		\$775,001		\$9,160,398		\$35,421,966

\* This table is based on a Problem Type Unit and Cost Summary Report from the Abandoned Mine Land Inventory System as of 10/4/2000  
NOTE: Completed cost of \$1 or less means that problem type was reclaimed incidental to reclamation of another problem type.

**Table 2**  
**Utah Abandoned Mine Reclamation Program**  
**Noncoal Reclamation Accomplishments and Remaining Reclamation Needs\***

Problem Type and Description	Unfunded		Funded		Completed		Total	
	Units	Costs	Units	Costs	Units	Costs	Units	Costs
Dangerous Highwalls	30.0 feet	\$60,000	0.0	0	0.0	0	30.0 feet	\$60,000
Dangerous Piles & Embankments	0.0	0	0.0	0	1.0 acre	\$1,400	1.0 acre	\$1,400
Hazardous Equipment & Facilities	0.0	0	0.0	0	3 (count)	\$19,808	3 (count)	\$19,808
Portals	1,575 (count)	\$2,475,689	149 (count)	\$307,744	1,471 (count)	\$1,277,415	3,195 (count)	\$4,060,848
Subsidence	0.0	0	12.0 acres	\$276,340	179.2 acres	\$2,066,050	191.2 acres	\$2,342,390
Vertical Openings	373 (count)	\$860,183	41 (count)	\$130,046	712 (count)	\$1,257,373	1,126 (count)	\$2,247,602
<b>UTAH TOTAL COSTS</b>		\$3,395,872		\$714,130		\$4,622,046		\$8,732,048

\* This table is based on a Problem Type Unit and Cost Summary Report from the Abandoned Mine Land Inventory System as of 10/4/2000