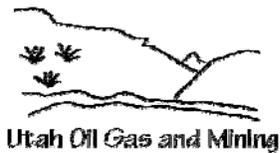


**ANNUAL SUMMARY EVALUATION**  
**of the**  
**UTAH ABANDONED MINE RECLAMATION PROGRAM**  
**for**  
**EVALUATION YEAR 2005**  
(July 1, 2004, through June 30, 2005)



August 22, 2005

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ACRONYMS

AML	Abandoned Mine Lands
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	Utah Division of Oil, Gas and Mining
NAAMLPS	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 (of the U.S. Dept. of the Interior)
SMCRA	Surface Mining Control and Reclamation Act of 1977, as amended
SQL	Structured Query Language
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFS	Forest Service (of the USDA)

## **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 to reclaim abandoned mines. SMCRA 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 is to evaluate 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 been evaluating the Utah Abandoned Mine Reclamation (AMR) Program and the Colorado Inactive Mine Reclamation Program (CIMRP) since January 1996. The team includes representatives of the Utah AMR Program, CIMRP, and OSM’s Denver Field Division (DFD). Team members during the 2005 evaluation period included: Frank Atencio, Grants Management Specialist, OSM-DFD; Dave Bucknam, CIMRP; Tony Gallegos, Acting Administrator, Utah AMR Program, alternating with Mark Mesch, Administrator, Utah AMR Program; Loretta Pineda, Administrator, CIMRP; and Ron Sassaman, Environmental Protection Specialist, OSM-DFD.

This report summarizes our review and evaluation of the Utah AMR Program for the 2005 evaluation year, which included the period of July 1, 2004, through June 30, 2005.

## **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 SMCRA. That approval enables the AMR Program to reclaim the State’s abandoned mines using SMCRA funds in non-emergency projects. The AMR Program is part of the Division of Oil, Gas and Mining (DOGM) in Utah’s Department of Natural Resources. It administers Utah’s abandoned mine reclamation program under the State’s approved Plan. The Denver Field Division of OSM’s Western Region 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 for annual grants to support their programs and reclaim specific projects. OSM awards grants to Utah to fund the AMR Program’s administration costs for the period of July 1<sup>st</sup> of one year through June 30<sup>th</sup> of the following year. The same grants also award construction funding that is available to the Program during the same period for each of three years after the initial grant award date. OSM awarded \$1,542,781 to Utah for the AMR Program’s 2004 grant on June 17, 2004. That grant became effective July 1,

2004, the beginning date of the 2005 evaluation year. OSM amended that grant for an additional \$450,000, bringing the total award amount for Utah's 2004 grant to \$1,992,781. The administrative component of Utah's 2004 grant expired on June 30, 2005, and the construction component expires on June 30, 2007. The grant funded eleven positions and the Program's administrative activities. It also funded construction on one coal and two noncoal projects and the Program's engineering, design, and other planning needs for six additional noncoal projects.

On May 26, 2005, OSM awarded \$1,518,045 to Utah for its 2005 grant. The grant funds reclamation of two noncoal projects and costs of administering the program with 11 positions. It became effective July 1, 2005, the first day of the 2006 evaluation year.

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

### **III. Noteworthy Accomplishments**

The AMR Program was active in the following public outreach activities:

- Staffing an educational booth during the Utah Education Association's meeting;
- Holding public open house meetings for the Ophir and Vernon – Sheeprocks noncoal projects;
- Mailing workbooks to all fourth grade students in the State that describe Utah's mining heritage, mining's role in everyday life, and abandoned mine hazards;
- Giving presentations to grade school classes about mine safety, rocks and minerals, and bats; and
- Giving a mine safety presentation at the Department of Natural Resources' support staff conference.

The Program also participated in conferences and training. All staff attended the National Association of Abandoned Mine Land Programs' annual meeting. Two staff members gave presentations at that meeting and one moderated a session. One staff member attended NAAML's mid-winter business meeting. The Program's Administrator currently serves as NAAML's Vice President. Also, one staff member presented a paper at the Advanced Integration of Geospatial Technologies in Mining and Reclamation Conference. Staff members served as instructors for two OSM-sponsored NEPA classes, a communications class, and an AquaChem class. Finally, one staff member attended training to become an instructor of OSM-sponsored training courses.

Continued partnering with other agencies enables the Program to leverage its SMCRA funding with other resources to address abandoned mine problems. Partnerships with the Forest Service helped close 33 priority one mine openings in the Fishlake noncoal project and planned reclamation of the Vernon subproject of the Sheeprock noncoal project. The Bureau of Land Management (BLM) partially funded reclamation of the Circle Cliffs project, which reclaimed up to 46 priority 1 mine openings and plugged 50

drill holes. BLM also funded 100 percent of UAMRP's cost of sealing two copper mine portals in the Colt Mesa project that did not qualify for SMCRA funding. UAMRP and BLM cooperated on planning for the Ophir phase 2 and the San Rafael Swell noncoal projects and the White River oil shale project. Barrick Mercur Resources provided private funding to UAMRP for closure of two mine openings in the Ophir project as well.

UAMRP provided assistance to other programs in the Division of Oil, Gas and Mining. It helped the Minerals Regulatory Program reclaim the Drum Mine bond forfeiture site between April and May 2005. Also, it is helping the Coal Regulatory Program with ongoing reclamation of the White Oak bond forfeiture site.

We recognize DOGM's continuing efforts to include measures for protecting wildlife, particularly bats, and wildlife habitat by constructing specialized mine closures as a routine part of its AML reclamation. UAMRP constructed 51 bat-compatible mine closures during the 2005 evaluation year.

#### **IV. Results of Enhancement and Performance Review**

We updated the current "Colorado-Utah AML Review Team Performance Agreement" in an August 2, 2004, meeting to describe the principles of excellence and performance measures that we planned to review in the 2005 evaluation year. We finalized the updated agreement on December 2, 2004.

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 principle of excellence and the specific performance measures we chose for our 2005 evaluation of the Utah AMR Program are:

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

- *Performance Measure (d):* Does the State have a system in place to make sure the data it enters into AMLIS match data in its files?
- *Performance Measure (g):* How is information technology (IT) being used to implement AML program activities?

Results of our 2005 evaluation are described below in Parts IV.A and B. For this evaluation, we met with Division and Program members at the Program's office, and reviewed examples of IT resources, UAMRP's "system" for ensuring the accuracy of AMLIS data, and information in OSM's evaluation support data file. 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 2(d) and 2(g).

#### A. Summary Evaluation of Performance Measure 2(d)

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' AML programs. That report criticized the accuracy of the AMLIS data, 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 requires 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" as part of the FY2004 oversight (subsequently changed to the 2005 evaluation year). We evaluated the Utah AMR Program's system for ensuring that data it enters into AMLIS match data in its files in fulfillment of the first new requirement. Our evaluation goal was to determine if Utah has such a system and what it consists of.

Currently, the Program uses a manual system to compile information for AMLIS input. After project completion, project managers compile information from invoices and electronic tracking systems (such as Excel spreadsheets) and hand-write it on the Project Completion Summary form. Project managers then give the completed hand-written forms to the designated "AMLIS person" who uses the data to update AMLIS. The AMR Program keeps the hand-written forms in its files.

The first page of the manual system form includes project and contract identification data, project cost and accomplishments data, applicable dates, and information identifying the AMLIS Problem Area Description (PAD) and OSM grant. The form requires the Project Manager to calculate costs and accomplishments data by AMLIS keyword.

Project maintenance costs are calculated on the second page of the manual system form. Data entered on the second page identify the total maintenance cost, original project name and AMLIS PAD, the project manager and the date of maintenance completion, keyword types, and construction costs by keyword. Summing the keyword costs gives a total maintenance cost figure, which is carried over to the first page and added into the original project's total cost.

Project managers also enter information into the database by importing Excel spreadsheets directly into Access, but the Program plans to switch to a Structured Query Language (SQL) database in Access software to track project information. It plans to use this database as the primary means of compiling information for AMLIS input as well. The Program plans to transition from having project managers hand-write

summary forms to having them generate summary reports from the database in paper or electronic form for the designated AMLIS person's use in updating AMLIS. Its goal is to replace the manual system entirely once project managers become proficient with the database.

We did not identify errors in the data or find problems with Utah's system during this review. Upgrading the system to the SQL database should reduce potential for errors by reducing data transcription, automating some calculations, and providing a report that can be checked against other data sources. With reasonable care, we expect its use will ensure Utah's AMLIS data match data in its files.

#### B. Summary Evaluation of Performance Measure 2(g)

We planned this evaluation of the 2(g) performance measure to identify the IT resources the AMR Program uses and what it accomplished with them recently. We reviewed the Program's uses of IT resources to inventory AML hazards and cultural and natural resources, to select projects, track ongoing construction and contract performance, track completed reclamation and report costs and accomplishments, provide information to contractors and other entities, and characterize underground mine fires.

The Program compiles data in an Access database that eventually will be the primary repository of most, if not all, of its information once the migration to the SQL database engine is complete. DOGM's goal is to use fewer software applications with similar attributes to address a wider variety of information needs. The purpose of that approach is to minimize the different ways data are stored and the forms they take to make data easier to use and transfer from one application to another and reduce data loss.

DOGM refined its GIS-based noncoal planning process, or model, as needed to enable the AMR Program to identify and reclaim Utah's most serious hazards. It improved datasets for population, mining-related activities and districts, access, and recreation. Refining the data enables the noncoal planning process to generate data and maps that more accurately identify AML problems and show where the most serious hazards are in the State. The model enables project managers to delineate project boundaries that are more workable and project sizes that the Program can address with available funding. The AMR Program is better able to plan projects to address the highest priority noncoal problems throughout the State as a result. DOGM also uses the noncoal planning process to help other agencies, such as the Utah Department of Environmental Quality and the U.S. Department of Agriculture, Forest Service, identify AML problem areas.

Information technology resources also help the AMR Program inventory AML hazards and cultural and natural resources. Contractors currently inventory hazards and cultural and natural resources for the Program using a combination of paper field inventory forms, Excel spreadsheets, Global Positioning Systems (GPS) units and digital cameras. DOGM enters data from these sources directly into a Geographic Information

System (GIS) and the current Access database. In the future, DOGM plans to integrate the field inventory form with GPS and digital cameras into one field application, possibly using pocket notebooks or laptops with enhanced GPS to facilitate data gathering and recording as well as IT support. Integrating these data sources would facilitate data input in the field and instant updates. Data compiled from these inventories facilitates the Program's project selection and planning. In addition to proving useful for projects-in-planning, the database also archives information for completed projects.

Utah's AMR Program uses the Access database and Excel spreadsheets to generate numerous reports that meet a variety of needs. Such reports can summarize contractor performance, contract change orders, and track reclamation milestones. A project completion summary report it generates will eventually replace the paper copy completion summary the Program uses to update AMLIS (SEE Part IV.A above). DOGM has used this database to respond to inquiries from the State Legislature, local police departments, and building contractors. The Excel spreadsheets help DOGM develop high quality construction specifications and bid documents. Improved information in those documents enables construction and survey contractors to improve their bids, in turn helping the AMR Program get better contract performance. The Access database includes a link to inventory and project maintenance photographs.

DOGM uses ArcMap and ArcView software to produce maps and drawings for its AML project specification / bid packages. It also uses AutoCAD software to produce design drawings used in its construction specifications. As noted above, improving the quality of information in these documents enables prospective contractors to improve their bids and their contract performance.

DOGM developed a bat gate database as a subset of the Access database. As noted earlier in this report, the Program builds specialized closures where field surveys find bats or bat habitat in abandoned mines. However, the effects such closures actually have on bats are not yet well documented. Data from bat surveys give the Program a basis on which to determine if specialized closures are needed to avoid adversely impacting bats and bat habitat where possible. The data can be manipulated to respond to a variety of inquiries concerning the results of bat surveys, characteristics of abandoned mines surveyed, the types of closures installed, closure costs, and eventually the potential effects of specialized closures on bats. A link to photographs of the closures is included.

OSM and the AMR Program tested an infrared (IR) camera integrated with GPS technology at two underground coal mine fires. The demonstrations attempted to show how the IR camera could be used in combination with a hand-held GPS unit, GPS base station, and laser rangefinder to collect temperature and spatial data. This approach theoretically would enable the Program to monitor the fires' conditions at specific locations over time to detect changes. DOGM found that the IR camera technology may be useful for reconnaissance-level fire investigations but the technology's ability to indicate what was occurring underground at points where surface readings were taken was limited.

Finally, the Program used EarthVision software to model one underground mine fire using drill core and temperature data. Though the software’s depiction of subsurface fire conditions was limited, DOGM was able to model the underground stratigraphy showing some of the fire’s burning zones.

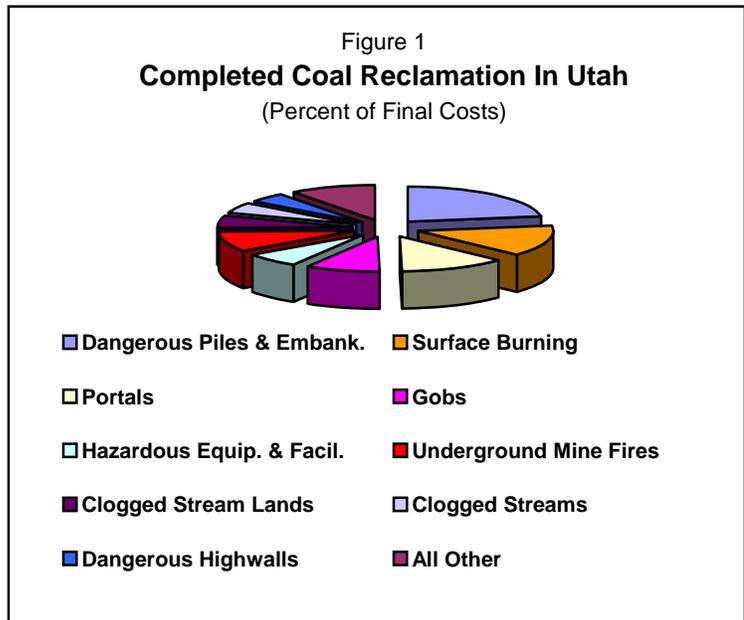
**V. Accomplishments and Inventory Reports**

Title IV of SMCRA stresses reclamation of abandoned coal mine-related problems because a fee that active mines pay per ton of coal produced generates the AMR Fund. Nevertheless, the Utah AMR Program’s reclamation and inventory address coal and noncoal problems.

Utah reclaimed 52 coal projects from the time the Secretary approved its AMR Program to the end of the 2005 evaluation period. Abating nine types of AML problems required 89.9 percent of the almost \$9.6 million-plus Utah spent to reclaim those coal projects.

Those problem types include: Dangerous piles and embankments (22.3%); surface burning (14.2%); portals (12.6%); underground mine fires (9.4%); gobs (8.8%); hazardous equipment and facilities (6.6%); clogged stream lands (5.7%); clogged streams (4.7%); and dangerous highwalls (4.6%).

Fifteen other types of problems make up the remaining 10.1 percent of the Utah AMR Program’s completed abandoned coal mine reclamation. Figure 1 (right) shows the Program’s reclamation of various coal

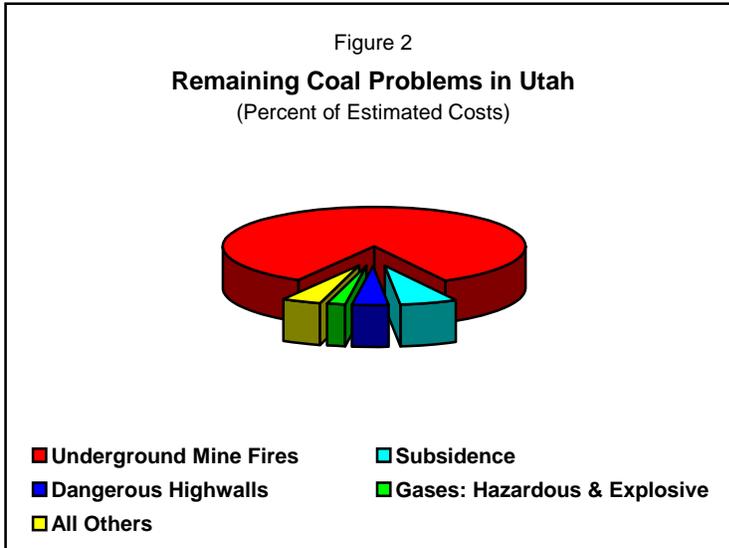


problem types and how they compare to each other and all coal reclamation completed in Utah to date. Appendix 1 shows the costs and accomplishments of the Program’s completed reclamation. UAMRP started and completed the Maclean underground coal mine fire phase 5 drilling project during the 2005 evaluation year and is monitoring temperatures and analyzing combustion gases.

Utah has addressed most of the different *types* of abandoned coal mine problems it inventoried in AMLIS. The Program spent over \$8 million to abate priority 1 and 2 coal problems, including: Portals; vertical openings; subsidence; surface burning and underground mine fires; dangerous highwalls, impoundments, piles and embankments, and slides; hazardous and explosive gases and equipment and facilities; industrial and residential waste; and polluted water. To date, Utah also has addressed most of the priority 3 abandoned coal mine problems currently inventoried in AMLIS. It spent

\$1,572,978 to abate problems attendant to benches, industrial and residential waste, equipment and facilities, gobs, highwalls, haul roads, pits, spoil areas, slurry, slumps, and water problems.

On the other hand, the estimated cost of reclaiming unfunded coal problems that Utah continues to inventory in AMLIS is over \$23.63 million. That total is a decrease of about \$1,093,933 from the 2004 estimated unfunded cost of needed reclamation. About 98.5 percent of the estimated cost of unreclaimed problems is associated with only four problem types, including: Underground mine fires (86.2%); subsidence (6.3%);



dangerous highwalls (3.9%); and hazardous and explosive gases (2.1%). Consistent with these percentages, *all* of Utah's remaining unfunded priority 1 coal problems and *all but one* unfunded priority 2 coal problem are associated with coal fires. Those problems include dangerous highwalls, hazardous and explosive gases, subsidence, and underground mine fires. UAMRP has been testing and monitoring the effectiveness of various control measures on the Maclean

underground mine fire in an effort to identify an effective and practical method of abating it and other fires in the State. The results of the testing and monitoring will be one factor the Program considers in determining whether or not it can practically abate the fires it currently lists in AMLIS. DOGM also will consider the results of its ongoing underground mine fire monitoring to determine if those fires still require abatement. Part of that effort included the Program's completion of the "Utah Coal Fires Status Report With Recommendations for Future Work" on December 1, 2004. UAMRP based the report primarily on data in U.S. Bureau of Mines progress reports and on the results of feasibility studies that UAMRP contractors completed. The report discusses the status of three abandoned underground mine fires and eight coal outcrop fires in the State.

A total of \$337,134 of unfunded priority 3 coal problems remains as well. It includes benches, equipment and facilities, gobs, haulroads, pits, spoil areas, slumps, and water problems. Figure 2 (above) further illustrates the scope of Utah's remaining abandoned coal mine problems. Appendix 1 summarizes the estimated costs associated with each type of unfunded coal problem.

In addition to testing and monitoring fire abatement methods in the 2005 evaluation year, the Utah AMR Program concentrated most of its efforts on abating high priority

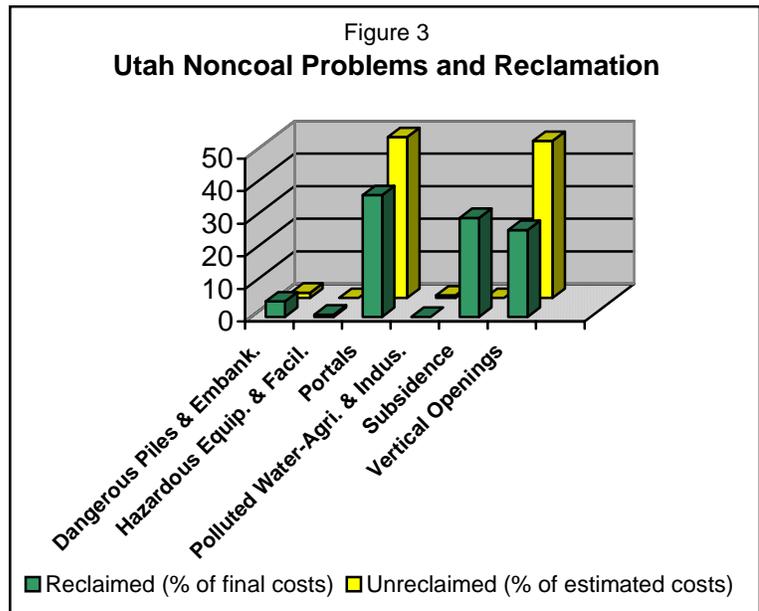
noncoal hazards and planning additional noncoal projects. In general, Utah's abandoned noncoal mines pose more significant hazards to public health and safety.

The Utah AMR Program addresses the State's most severe remaining priority one noncoal problems as ranked by its GIS-based noncoal selection process. Appendix 2 summarizes the noncoal problems Utah included in AMLIS and the State's noncoal reclamation accomplishments and costs to date. So far, OSM funded 37 noncoal projects in grants awarded to the AMR Program. The Program completed 32 of those 37 projects. DOGM's completed noncoal reclamation addressed dangerous highwalls, dangerous piles and embankments, hazardous equipment and facilities, polluted water, portals, subsidence, and vertical openings at a cost of over \$6.8 million.

During the 2005 evaluation year, Utah began construction on the Circle Cliffs, Fishlake, and Cherry Creek - Sheeprocks noncoal projects. In the same period, the Program completed those three projects and the Stateline noncoal project (Stateline having begun in the previous evaluation year). Accomplishments include closures of 363 priority 1 noncoal portals and vertical openings and just over 20 acres reclaimed in the 2005 evaluation year. Appendix 1 shows that the AMR Program closed a total of at least 4,249 noncoal portals and vertical shafts since it began in 1983. Figure 3 below illustrates the percentage each type of inventoried, unreclaimed noncoal problem comprises of Utah's estimated unfunded reclamation costs. It also shows how much money the Program spent to address those noncoal problems since 1983.

AMLIS data do not reflect the overall scope of Utah's unfunded noncoal problems. The units data are very preliminary estimates of UAMRP's near-term reclamation planning needs, and their attendant costs are rough estimates as well. Essentially, Utah's

unfunded noncoal data in AMLIS list the most hazardous priority 1 problems UAMRP plans to include in projects over the next few years. DOGM's internal inventory is much more comprehensive and shows that Utah's remaining abandoned noncoal mine problems still number in the thousands and are found throughout the State despite the AMR Program's efforts over the past several years. In that context, the State's list of noncoal hazards in AMLIS shows that more than \$3.1 million are needed to address the most hazardous



priority 1 noncoal problems it plans to include in near-term reclamation projects, excluding work already funded. Dangerous piles and embankments, polluted water,

portals, and vertical openings make up 100 percent of the problems that estimated cost is based on. These abandoned mine features pose immediate and extreme hazards to public health and safety because they are so numerous and widespread and because demographic changes increasingly put people in proximity to them. On the other hand, AMLIS reflects DOGM's progress in addressing the State's noncoal problems: UAMRP's AMLIS data show it completed 4,249 closures of noncoal portals and vertical openings by the end of the 2005 evaluation year. That number is an increase of 1,005 over those reported as complete by the end of the 2004 period, an increase of 1,258 completed since the end of the 2004 period, and an increase of 1,480 completed closures over those the Program reported by the end of the 2002 evaluation year.

## Appendix 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	6 acres	\$7,500	0	0	4 acres	\$154,544	10 acres	\$162,044
Clogged Streams	0.2 mile	\$10,000	0	0	14.1 miles	\$455,376	14.3 miles	\$465,376
Clogged Stream Lands	0	0	0	0	9 acres	\$546,126	9 acres	\$546,126
Dangerous Highwalls	4,500 feet	\$920,000	0	0	3,425 feet	\$444,871	7,925 feet	\$1,364,871
Dangerous Impoundments	0	0	0	0	1 (count)	\$14,600	1(count)	\$14,600
Dangerous Piles & Embankments	0	0	0	0	136 acres	\$2,141,124	136 acres	\$2,141,124
Dangerous Slides	0	0	0	0	3 acres	\$29,825	3 acres	\$29,825
Equipment & Facilities	5 (count)	\$3,700	0	0	64 (count)	\$47,850	69 (count)	\$51,550
Gases: Hazardous & Explosive	5 (count)	\$500,000	0	0	19 (count)	\$55,000	24 (count)	\$555,000
Gobs	54 acres	\$125,500	0	0	255 acres	\$846,349	309 acres	\$971,849
Highwall	0	0	0	0	550 feet	\$1	550 feet	\$1
Hazardous Equipment & Facilities	0	0	0	0	156 (count)	\$630,623	156 (count)	\$630,623
Haul Road	0.5 acre	\$5,000	0	0	3 acres	\$35,000	3.5 acres	\$40,000
Industrial / Residential Waste	0	0	0	0	9 acres	\$76,800	9 acres	\$76,800
Portals	0	0	0	0	507 (count)	\$1,212,453	507 (count)	\$1,212,453
Pits	3 acres	\$900	0	0	8 acres	\$23,266	11 acres	\$24,166
Polluted Water: Agric. & Industrial	0	0	0	0	3 (count)	\$55,700	3 (count)	\$55,700
Subsidence	180 acres	\$1,500,000	1 acre	0	4 acres	\$106,917	185 acres	\$1,606,917
Spoil Area	28.3 acres	\$174,034	0	0	55 acres	\$264,484	83.3 acres	\$438,518
Surface Burning	0	0	0	0	38.8 acres	\$1,368,636	38.8 acres	\$1,368,636
Slurry	0	0	0	0	1 acre	\$2,830	1 acre	\$2,830
Slump	7 acres	\$16,000	0	0	16 acres	\$24,143	23 acres	\$40,143
Underground Mine Fire	326 acres	\$20,365,071	10 acres	\$163,000	27 acres	\$903,277	363 acres	\$21,431,348
Vertical Openings	0	0	0	0	24 (count)	\$49,243	24 (count)	\$49,243
Water Problems	1.5 gal/min	\$4,500	0	0	20.3 gal/min	\$117,085	21.8 gal/min	\$121,585
<b>UTAH TOTAL COSTS</b>		<b>\$23,632,205</b>		<b>\$163,000</b>		<b>\$9,606,123</b>		<b>\$33,401,328</b>

\* This table is based on a Problem Type Unit and Cost Summary Report from the Abandoned Mine Land Inventory System as of July 7, 2005.

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

Appendix 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	0	0	0	0	500 feet	\$2,206	500 feet	\$2,206
Dangerous Piles & Embankments	50 acres	\$50,000	0	0	240 acres	\$317,410	290 acres	\$367,410
Hazardous Equipment & Facilities	0	0	0	0	65 (count)	\$45,821	65 (count)	\$45,821
Portals	1,000 (count)	\$1,532,500	0	0	2,547 (count)	\$2,573,102	3,547 (count)	\$4,105,602
Polluted Water: Agri. & Indus.	1 (count)	\$25,000	0	0	0	0	1(count)	\$25,000
Subsidence	0	0	0	0	178.2 acres	\$2,066,049	178.2 acres	\$2,066,049
Vertical Openings	807 (count)	\$1,496,000	0	0	1,702 (count)	\$1,813,841	2,509 (count)	\$3,309,841
<b>UTAH TOTAL COSTS</b>		<b>\$3,103,500</b>		<b>0</b>		<b>\$6,818,429</b>		<b>\$9,921,929</b>

\* This table is based on a Problem Type Unit and Cost Summary Report from the Abandoned Mine Land Inventory System as of July 7, 2005. AMLIS does not include a complete inventory of Utah's unfunded noncoal problems.

Appendix 3

State Comments on the Report

From: Mark Mesch [markmesch@utah.gov]  
Sent: Wednesday, August 03, 2005 1:26 PM  
To: Ronald Sassaman  
Subject: Re: Revised draft 2005 Utah summary annual report

Hi Ron,  
I have read the revised 2005 annual evaluation report for Utah. I agree with the report as it is now written. I appreciate your willingness to discuss the issues that were raised regarding AMLIS and its misrepresentation of non-coal accomplishments in Utah. I believe the changes made to the document more accurately reflect Utah's actual accomplishments. Thanks again for all of your efforts.

Mark Mesch