



# **DEPARTMENT OF INTERIOR**

**OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT**



## **Annual Evaluation Summary Report For the Abandoned Mine Land Reclamation Program**

**Administered by the State**

**Of**

# **WYOMING**

**Evaluation Year 2002**

**(October 1, 2001 to September 30, 2002)**

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**Cover Photo: Wolf Mine shaft house, Kirwin, WY**

## **ANNUAL REPORT**

### **Part I. General**

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) created the Office of Surface Mining Reclamation and Enforcement (OSM) in the Department of the Interior to oversee the regulation of coal exploration and surface coal mining and reclamation operations and the reclamation of lands adversely affected by past mining practices. SMCRA provides that, if certain conditions are met, a State may assume primary authority for the reclamation of abandoned mine lands within its borders. Once the State has obtained such approval, OSM has the responsibility to make investigations, evaluations, and inspections necessary to determine whether the State Abandoned Mine Land (AML) program is being administered in accordance with the approved program provisions.

OSM's evaluation methods are based upon OSM Directive AML-22 and a Programmatic Agreement between Wyoming AML and OSM. The agreement establishes a commitment between the State and OSM as to how oversight will be conducted. This approach allows the State to take a more active role in the entire oversight process. The State and OSM staff developed topics for review, specified methodologies for evaluation, and assisted one another in the preparation of the final report.

OSM's Casper Field Office (CFO) in partnership with the Wyoming AML Division identified specific topics to be reviewed during the review period. Wyoming AML Division and the CFO worked in concert to write the Programmatic Agreement.

The assessment of the Wyoming AML program included enhancement and performance reviews of selected topics. Specific topics are past reclamation, ongoing reclamation, and financial administration.

The State certified on May 25, 1984 that all inventoried coal mines eligible for AML reclamation have been completed or were being reclaimed or scheduled for reclamation. As new coal sites are found, the State gives them first priority over non-coal sites and

reclaims them as soon as possible. Wyoming gained authority to use AML funds for public facility projects in 1992. Wyoming currently concentrates approximately 30 per cent of State share funds on constructing public facility projects.

Wyoming does not have an AML Emergency program and therefore emergency projects are administrated by OSM. However, Wyoming AML Division assists OSM with AML emergencies, since most emergencies are initially reported to Wyoming AML. When this occurs, Wyoming contacts the OSM Casper Field Office and the Western Regional Coordinating Center and assists in the abatement of such emergencies. In many instances, Wyoming has AML construction activities in the area of the emergency and offers assistance through their existing contractors.

Overall, Wyoming administers its AML program in a professional manner resulting in high quality performance of the program. Excellent communication and cooperation between OSM and the Wyoming AML program staff continue.

The following is a list of acronyms used in this report:

|        |  |
|--------|--|
| SMCRA  | Surface Mining Control and Reclamation Act |
| AMLR   | Abandoned Mine Land Reclamation            |
| AMLIS  | Abandoned Mine Land Inventory System       |
| AML    | Abandoned Mine Land                        |
| WAMPLP | Wyoming Abandoned Mine Land Program        |
| OSM    | Office of Surface Mining                   |
| CFO    | Casper Field Office                        |
| DEQ    | Department of Environmental Quality        |
| BLM    | Bureau of Land Management                  |
| SHPO   | State Historic Preservation Office         |
| EPA    | Environmental Protection Agency            |

WYAMPLP continues to administer the AML program with a staff of 12.5 FTE's from three offices. Field Offices are located in Lander and Casper while the Administrators office is located in Cheyenne. The WYAMPLP Project Officers perform the bulk of the program administration. WYAMPLP continues to hire consulting engineering and design management firms to assist the AMLP with evaluation, design and construction on the following major types of projects:

1. Shaft, adit and topographic depression closures.
2. Large open pit closures.
3. Subsidence abatement.
4. Public facilities projects.

WYAMPLP also contracts for the following services:

1. Monitoring and certification of completed sites.

2. Cultural resource reviews and reports.
3. Consents and clearances
4. Resource reviews and reports (threatened and endangered plants and animals, wetlands delineation, paleontological artifacts, migratory birds)

Procurement of services from consultants and contractors begins with a review of the AML

Inventory. Sites are prioritized according to the criteria established in SMCRA. When the sites are selected, consulting firms are asked to submit a Statement of Interest (SOI). Site selection occurs around October 1 of each year. An AML selection committee selects 3 firms for each project from reviews of submittals and then interviews each contractor. The contractor is selected after the DEQ Director, the AML Administrator and the individual Project Officer concur. The project officer negotiates a contract based on the firms written proposal.

Design work consists of obtaining land and mineral owner consents, eligibility determination, surveying and mapping, and the preparation of a Report of Investigation. This report identifies the reclamation alternatives. Following opportunity for public comment, AML selects an alternative and the consultant prepares the final reclamation design. Following a bid tour of the site, bids are received when design work is completed. Bids are awarded to the lowest responsible firm qualified for the work.

Prior to beginning any construction work, the AMLP submits to OSM a Detailed Documentation package. This set of documents includes an Environmental Assessment, NEPA clearances, an eligibility determination from the Attorney General, a threatened and endangered plant and animal species survey, a cultural resource evaluation, maps, and site photographs. The AMLP obtains an Authorization to Proceed (ATP) from the Casper Field Office prior to reclamation or construction of each project.

## **Part II. Noteworthy Accomplishments.**

In the last twenty years, the AMLP has reclaimed over 860 abandoned mine sites encompassing over 38,660 acres. Approximately \$106.4 million have been spent on coal reclamation. Most of that has been spent for stabilizing mine subsidence in business and residential areas of Rock Springs, Glenrock and Hanna. Approximately 291 acres of coal mine related reclamation was completed this evaluation year. The majority of this money was spent on grouting underground subsidence, coal fires, and surface mine reclamation. Approximately \$71 million has been spent reclaiming abandoned bentonite pits in the northeast and northern portion of the state. Approximately \$18.4 million has been spent in the reclamation of hard-rock mine sites throughout the State. Reclamation of abandoned uranium mine sites has accounted for \$66.9 million. Uranium, conglomerate, phosphate and hard rock reclamation makes up a bulk of the remaining work to be done. AMLP initiated design activities preliminary to reclamation of phosphate mines. AMLP has invested over \$60.4 million in public facility projects around the state. This evaluation year AMLP has provided funding for \$3.4 million for public facilities projects. The remaining funding has been split among a mine subsidence insurance program,

administrative costs, engineering services, and establishing a trust fund to address future mine subsidence and reclamation needs. The amount of funding used for construction of public facilities has been approximately 25-30 per cent of the total construction expenditure and is expected to remain constant in the coming years.

Monitoring and certification of completed AMLP reclamation projects had been a low priority due to the absence of an AML Administrator from the summer of 1998 to May of 1999. During the 2000 AML Professional Service Procurement Process, a contractor was hired to perform monitoring and certification activities. During 2001, the contractor monitored 163 sites. Of those, 147 sites were determined complete and successfully reclaimed. AML has initiated the certification process on those sites. Then sites were recommended for continuing monitoring. Six sites were recommended for remediation, one large site was recommended for both continued monitoring and extensive remediation or new reclamation. Where immediate hazards were identified during monitoring, immediate action was taken by AML to ameliorate the hazards. Other sites will be addressed when other reclamation is scheduled in the area. The monitoring contractor has acquired landowner consent for monitoring of 85 additional sites. The remaining 72 sites will be monitored during the 2003 field season.

The University of Wyoming and the DEQ signed an agreement in 1990 to use \$270,000 of AML funds annually to support mine reclamation research efforts. The Governor certified this research agreement through 2005. The intent of funding this research is to provide technical assistance and support to identify and quantify environmental impacts from past and present coal mining and to find appropriate and practical mitigation. The Wyoming coal mining industry, OSM and AMLP support the reclamation research because of the need to develop scientifically sound solutions to identified problems. The Land Quality Division of DEQ, which must enforce the State reclamation laws, also supports the program because the information provided allows more precise assessment of the mitigation practices of the impacts of mining. The ultimate goal of the research is to provide positive benefits to the economy and environment of Wyoming.

Two new Project Officers have been hired by WYAML P during this evaluation year and one Project Officer retired. Four WYAML P Project Officers participated in abandoned mine reclamation training conducted by OSM this EY. One officer attended the Surface and Groundwater and Historic and Archeologic Resources training. Another officer attended NEPA training and Effective Writing courses. A third officer participated in the OSM Wetlands Awareness training course. OSM contributed \$16,545 to the WYAML P for expenses incurred in employees participating in OSM sponsored training. The WYAML P continues to maintain a highly competent staff adequate to administer and carry out the workload.

During the past ten years, the WYAML P has been awarded OSM Excellence Awards on six past projects. The award winners include the following projects:

1. Aladdin coal tipple and interpretive site.
2. Rock Springs subsidence abatement and public facility.

3. Shirley Basin uranium district mines.
4. Crook County bentonite.
5. Veca Pit and spoils project.
6. Sunrise iron ore mine.

As of June, 1999 WYAMLPL had only a handful of entries in the OSM AMLIS. This was due in part to a shortage of staff and administrative direction, and in part to the difficulties encountered in making entries into the AMLIS database of that era. In October of 1999, AML contracted a firm to conduct a state-wide inventory of abandoned mine sites and update WYO AML AMLIS for both completed projects and for those remaining on the AML inventory of sites to be reclaimed. Currently, AMLIS lists \$35,572,894 in unfunded costs, \$356,679,919 in completed costs, and \$394,269,278 in total costs.

Of the total 3,372 sites that were recorded in various versions of the existing inventory at the time, 1,007 were field-verified. During the field verification inventory, AML was denied access to 30 sites by landowners, and the inventory team was unable to locate 110 sites with the information available. Further refinement of the database has identified and eliminated some duplicate locations and clarified the status of other locations. The 2002 WYAMLPL inventory update to AMLIS showed 1,408 sites with 3,170 hazards including public facility projects and some sites completed under the RAMP program. The database is under constant updating, and new sites are identified or reported on a regular basis. As site conditions are verified, this information is entered into AMLIS and the AML Access Data Base. During the 2002 field season, WYAMLPL evaluated over 50 new hazardous sites that had previously gone unreported to WYAMLPL. AML staff continues to perform quality assurance analysis on inventory and AMLIS information during site visits to active projects.

The Ferris Haggerty project is an abandoned copper mine located on private land within the boundary of the Medicine Bow National Forrest lands. Over the past several years, the WYAMLPL has spent \$2.5 million at Ferris Haggerty preparing the mine for mitigation of acid mine drainage containing toxic amounts of copper that enters the streams of Wyoming. This expenditure includes installation of a safety closure and stabilization of the underground workings where personnel would need access, as well as research, design, and pilot treatment modalities to correct the discharge problem. The initial thrust of this project was stabilization of the portal and Osceola Tunnel and installation of a substantial locking closure at the portal. This closure remains in place, preventing access to the mine.

The treatment evaluation that was initiated subsequent to the portal closure included construction of a small-scale anaerobic passive treatment cell on site in 1999-2000, and result of this evaluation were encouraging. Valuable information was gained concerning anaerobic treatment of excessive levels of copper in mine discharge water. The experimental results indicated that a large cell would be necessary for effective treatment. Although the portal closure was effectively initiated, implementation of anaerobic mine discharge treatment has been confounded because due to the size constraints and personnel safety requirement for workers, such a large-scale treatment cell cannot be installed within

the tunnel as originally planned. There is also insufficient space to construct the cell on the portal owner's surface holdings. The option of acquiring land from the landowner immediately downstream of the portal cannot be accomplished because that landowner is unwilling to negotiate the sale of sufficient land required for construction of the treatment system. Given the benefit of hindsight, it appears that it would have been prudent to negotiate land acquisition as a component of access for the treatment feasibility study. Aside from the constraints on a location upon which to build a treatment cell, WYAML has concerns that although the cell may reduce contamination, it is unlikely to eliminate it. Because of current EPA regulations, WYAML is reluctant to assume the potential liability of becoming a principal responsible party under CERCLA for the mine discharge, should WYAML make an unsuccessful attempt to correct the water quality problem. At this point, the mine discharge water treatment project has been placed on indefinite hold. The hazard to human health and public safety associated with the discharge is minor to non-existent. In view of WYAML's inventory of other, more hazardous sites, they feel they cannot justify further expenditures on this mine-water treatment project under current conditions and budget limitations. Other hazardous openings associated with the Ferris Haggerty mine works are slated to be addressed by another AML project. The portals and adits for the mine are presently under investigation for closure design that will address the additional safety hazards at the mine site.



**Ferris-Haggerty Copper Mine Area**

### **Public Outreach**

Wyoming DEQ continues to solicit public comment and invite input on the WYAML program. Wyoming DEQ maintains an excellent Web site that includes links to



information on AML dangers, calendar of upcoming AML projects, current construction bidding, project selection, department contacts, rules and regulations, and professional procurement information.

WYAMLPL participates in the Mine Safety and Health Administration “Stay Out Stay Alive” (SOSA) Program. A public outreach booth was set up at the 2002 Wyoming Game and Fish Expo in Casper where information on the program was available and publications distributed.

WYAMLPL sent 2 members to participate in an abandoned mine land restoration workshop hosted by the Mineral Policy Center. WYAMLPL has been actively involved in discussions by various interested parties on the reauthorization of the Act, as well as other discussions on the draft proposals for an act supporting reclamation of abandoned hardrock mines.

### **Part III. Results of Enhancement and Performance Reviews**

#### **Pre Construction AML Reclamation**

##### Acme-Welch Coal Mine

The Acme-Welch Coal Mine underground fire site was selected for evaluation this year. The on-site reviews were conducted from the ground and from the air. This site includes surface manifestations of burning underground coal mine fires. Hot smoke, gas, and steam is escaping through large cracks in the surface creating a safety hazard to people and wildlife. The cracks are several feet in width and several feet deep. A contractor recorded a temperature of 190 F degrees. The active fire is burning on and between two ridges on the banks of the Tongue River. The surface has slumped and appears to be creeping downhill towards the Tongue River.

Coal removal ceased from the nearby underground mine site in 1940. A map and literature search shows that mining came to within 600 feet of today’s fire. In the 1970’s, a large fire in the underground workings broke through the surface. At that time, the surface was covered with a mantle of fill in an effort to smother the fire and reduce the hazardous conditions. In 1978 a USGS Professional Paper provided information on the history of the Acme Mine and the approximate location. The U.S. Geological Survey compiled a report in 1980 that included maps indicating the mine location. This USGS report also stated that early underground mining caused several coal seam fires in the immediate area of the Acme-Welch fire.



### **Acme/Welch Underground Mine Fire Mitigation**

In August 2002, Airborne Data Systems completed a thermal imaging project of the entire Acme area. At this time AML determined the best course of action was to pump sand slurry into the surface cracks and fissures above the fire to retard surface manifestations and reduce the public safety hazard.

### **Post Construction AML**

### **Ongoing AML Construction**

#### Kirwin Mine

The Kirwin Mining district Stabilization project was funded and supported by the WYAML. Federal, state, and local agencies and private individuals contributed to this project. In addition to the WYAML involvement the partnership included US Forrest Service, Wyoming State Historic Preservation Office, Wyoming State Parks and Historic Sites Office, Wyoming Department of State Parks and Cultural Resources, and The Meeteetse Museums. The stabilization project resulted in rehabilitation of the Wolf Mine shaft house and the Tumlum Mine shaft house and headquarters buildings in the historic ghost town of Kirwin. This project helped reclaim and preserve one of Wyoming's most important historic sites while making the area safer for an ever-increasing number of visitors. Thirty-one volunteers from Wyoming, Georgia, Texas and Washington contributed more than 900 hours of donated labor to assist with this project. Kirwin is the most intact example of a period of gold mining town in Wyoming. The Kirwin stabilization made hazardous vertical mine shafts safe for the public while maintaining the historic integrity of the significant sites.

The Kirwin Mining camp began in 1885. Located at 9,500 feet and surrounded by 12,000 foot peaks, Kirwin is unique. Numerous buildings, including two mine shaft houses

remain standing. One of those is the Tumlum Mine shaft house, constructed about 100 years ago is one of the most unique structures in the Kirwin Mining District. The other shaft house, the Wolf Mine shaft house, was developed forty years later in the 1930's. Having intact shaft houses from different eras makes Kirwin an ideal site to interpret the evolution of mining. The Kirwin town site has the best architectural and historical integrity of any mine site in Wyoming and has been determined eligible for inclusion in the National Register of Historic Places.



**Tumlum Shafthouse, Kirwin, WY**

## **Financial Administration**

CFO conducted financial oversight during the evaluation period. CFO visited DEQ offices in Cheyenne, Wyoming and reviewed financial information. Specifically, drawdowns, timeliness of grant applications and reports, audits, accounting, property and travel were reviewed.

Wyoming has a U.S. Treasury Cash Management agreement covering the AML program and therefore no drawdown analysis was conducted. The agreement is current.

DEQ was timely regarding reporting both financial status of the existing AML grants and filing their grant application.

All program income earned under the AML grant is being reported and applied to AML grants. No problems were found.

Wyoming has new travel policies and procedures. Travel vouchers were sampled to ensure that DEQ is following their own travel policies and procedures. Authorization, per diem and other cost allowances were found to meet the requirements of the policies and procedures.

Wyoming DEQ has completed an A-133 Audit for one year ended June 30, 2001. There were no findings. There are no outstanding findings for any previous A-133 Audits. A current audit is being conducted for the year ended June 30, 2002.

DEQ continues to report property and transfer property in a timely manner. A new property inventory was taken during the Spring of 2001. The results of this review found that the DEQ is meeting program requirements.

## **Summary**

Site visits were coordinated with the AMLP Administrator for on-the-ground and office evaluation of topics. No problems were identified in the evaluation of past projects, on-going projects, and financial administration.

Citizens input and concerns are monitored through various contacts with the public. OSM observed such contacts as AMLP participation in, public information meetings, seminars published public notices, news releases and reports.

## **Part IV. Accomplishments and Inventory Reports**

The WYAML P program accomplishments in the past ten years include: 30,148 surface mined acres reclaimed including highwalls, landslides, refuse, and water impoundments; 1,332 mine openings safeguarded including shafts, portals, adits, stopes, and subsidence; 21 coal fires abated or controlled; and one acid mine drainage project completed. A total of \$390.6 million dollars in AML funds have been returned to WYAML P as the State share for AML reclamation.

Wyoming has completed 10 projects during the past year. Work included closing 43 shafts and adits, and 2 major projects grouting under residential and commercial structures at a cost of \$3.6 million, and reclaiming over 2620 acres. Wyoming also completed 5 public facility projects during this evaluation year.

All coal related sites in Wyoming have been reclaimed or WYAML P has instituted the necessary processes to reclaim any remaining coal related problems. WYAML P continues to increase funding for non-coal reclamation and public facilities projects. During the past year, WYAML P made significant progress in reclamation in the Gas Hills Uranium District and complete closure of several hazardous shafts, portals, and reclamation of bentonite and phosphate mines.

The WYAML P in Wyoming continues to be implemented according to the approved State Reclamation Plan and administered in a sound professional manner.



