OFFICE OF SURFACE MINING
RECLAMATION AND ENFORCEMENT

Annual Evaluation Summary Report
For the
MONTANA
Abandoned Mine Land Reclamation Program
Evaluation Year 2010

September 10, 2010

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(Cover Photo: The old Stedman Foundry now remodeled for the Montana Wildlife Center.)

I. General

A. Introduction

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 regulation of coal exploration, surface coal mining and reclamation operations, and reclamation of lands adversely affected by past mining practices. SMCRA provides that, if certain conditions are met, a state may assume primary authority for reclamation of abandoned mine lands (AML) within its borders. Once a state has obtained such approval, OSM has the responsibility to make investigations, evaluations, and inspections necessary to determine whether that State's AML program is being administered in accordance with approved program provisions. On November 24, 1980, the Secretary of the Department of Interior approved Montana's AML Reclamation Plan under Title IV of SMCRA. Montana's approved Reclamation Plan sets forth authority, policies, and procedures under which Montana operates its program. With the 1980 approval, the State assumed exclusive responsibility and primary authority for non-emergency AML projects within the State. On August 18, 1983, the Secretary approved Montana's April 20, 1983 amendment to its AML Reclamation Plan allowing Montana to assume responsibility for an emergency response reclamation program. On April 11, 1990, OSM announced in Federal Register notice (55 FR 13552) Montana has certified that all known coal problems had been addressed, and requested public comment. In Federal Register notice (55 FR 28022) of July 9, 1990, OSM approved the certification and authorized Montana to reclaim non-coal hazards. The Montana Department of Environmental Quality (MDEQ), Remediation Division, Abandoned Mine Lands Section currently administers these programs.

Evaluation of the State reclamation program is conducted by the Casper Field Office (CFO) of OSM. Evaluation Year (EY) 2010 consisted of a full twelve month period beginning on July 1, 2009 and ending on June 30, 2010. OSM's evaluation methods are based upon OSM Directive AML-22 (Evaluation of State and Tribal Abandoned Mine Lands Programs) and a Performance Agreement (PA) dated December, 2009 between Montana Abandoned Mine Lands Program (MTAML) and OSM. This agreement incorporates a shared commitment by the State and OSM in determining how annual evaluations will be conducted. The State takes an active role in the entire evaluation process. The process is designed to evaluate whether the State, through its AML reclamation (AMLR) program, is achieving the overall objective of Section 102 of SMCRA which states that AMLR programs are to:

> "... promote the reclamation of mined areas left without adequate reclamation prior to the enactment of this Act and which continue, in their unreclaimed condition, to substantially degrade the quality of the environment, prevent or damage the beneficial use of land or water resources, or endanger the health or safety of the public ..."

The agreement establishes a commitment between MTAML and OSM to identify topics for review, identify methodologies for enhancement and evaluation of performance reviews, and assist in the preparation of the final report. Assessment of MTAML performance includes reviews of selected topics such as 1) overall reclamation success, 2) emergency investigations and abatement efforts, 3) fiscal and administrative controls,

4) integration with the OSM Abandoned Mine Land Inventory System (AMLIS) database, 5) acid mine drainage, and 6) public interaction and outreach.

The following list of acronyms is used in this report:

AMD	Acid Mine Drainage
AML	Abandoned Mine Land
AMLIS	Abandoned Mine Land Inventory System
AMLR	Abandoned Mine Land Reclamation
ATP	Authorization to Proceed
CDRMS	Colorado Division of Reclamation Mining and Safety
CFO	Casper Field Office
DEQ	Department of Environmental Quality
EY	Evaluation Year
GPRA	Government Performance Results Acts
NTTP	National Technical Training Program
MTAML	Montana Abandoned Mine Land Program
OIG	Office of the Inspector General
OSM	Office of Surface Mining
PA	Performance Agreement
PAD	Problem Area Definition
SMCRA	Surface Mining Control and Reclamation Act
TIPS	Technical Innovation and Professional Services

B. Program Administration

Overall, the State of Montana administers MTAML under SMCRA, the approved State Reclamation Plan, the Federal Assistance Manual and associated rules, regulations and policy decisions. The State administers an excellent AMLR program in a manner reflecting high quality professionalism and performance, and excellent communication and cooperation between consulting agencies and other interested parties. The CFO and MTAML regularly consult and interact with one another.

The Montana AMLR program was initiated in 1980 and for the next ten years the State concentrated on abating the hazards left by past coal mining practices. In 1990 the State certified that all known coal problems had been addressed and they were then authorized by OSM to begin reclaiming the multitude of high priority non-coal hazards in their inventory. However, any abandoned coal hazards that are discovered must still be given priority funding over non-coal projects, and that requirement has been followed by Montana.

Initial investigation is usually conducted by the project officer who 1) conducts initial investigation; 2) obtains landowner consents; 3) negotiates inter-agency agreements if necessary; 4) writes environmental assessments; 4) conducts cultural resource and threatened and endangered species investigations and consultations; 5) conducts public meetings for information dissemination and comment; 6) prepares the submission to OSM for an Authorization to Proceed (ATP); and 7) conducts public meetings for the public stakeholders and potential construction contractors.

Prior to initiating any construction work, MTAML submits a documentation package to OSM with a request for an ATP. This package includes 1) a complete Environmental

Assessment or Categorical Exclusion, 2) a project eligibility determination pursuant to 30 CFR 874.12 prepared by the DEQ Attorney, 3) a threatened and endangered plant and animal species survey, and consultation results with the U.S. Fish and Wildlife Service, 4) consultation results with the State Historic Preservation Office, and 5) site maps, photographs. If acceptable and complete, CFO issues an ATP pursuant to section 5-11-20D.3 of the Federal Assistance Manual to MTAML prior to reclamation or construction of each coal project.

The State uses an established bid process to obtain services from qualified environmental, engineering, design and construction companies at the lowest effective price. Environmental hazard investigations, construction design and reclamation construction portions of each AML project are completed by private contractors. Design and specification work is contracted to engineering firms and is accomplished during the winter months when most outside work is impractical. Actual reclamation work starts as soon as weather and ground conditions allow heavy equipment to be moved to a site. Many of the sites presently being reclaimed are in mountainous terrain and at high altitudes. This fact may drastically shorten the amount of time available for reclamation work because of snow, ice and mud. In recent years the construction season has also been shortened by wildfires which necessitate special operating conditions shortening the allowable work days. A part of the responsibility of each engineering design contractor is to provide an inspector for the construction work. This inspector is on site during working hours to ensure that the work is being completed according to the plans and specifications that have been approved by MTAML.

MTAML staff is very knowledgeable and dedicated to the accomplishment of program goals. An excellent working relationship exists between the staff of MTAML, CFO, and other State and Federal agencies contacted during the course of preparing projects for reclamation. MTAML personnel spend most of the construction season in the field coordinating and supervising reclamation work, and preparing future projects for reclamation. Some construction work may continue into the winter months but the staff primarily spends this time of the year working with the design contractors to get projects ready for the upcoming construction season.

II. Noteworthy Accomplishments

A. Overall Performance

Since the Program's inception, MTAML has spent $60,279,228 in reclaiming mining hazards on 6,092 Government Performance Result Act (GPRA) acre-equivalents. $28,369,720 has been spent reclaiming coal mine hazards on 5,133 GPRA acres. This money was spent on treatment of coal slack and wastes, closure of mine openings, coal fires, and removal and disposal of structures and equipment. MTAML has also spent $31,909,508 reclaiming abandoned industrial mineral mine hazards on 959 GPRA acres. Significant hazards on both coal and non-coal sites remain to be mitigated and future funding will be required. Details of past achievements are found in Table 1.

B. Recognitions and Dedication

Brian Schweitzer, Governor of the State of Montana; Richard Opper, Director of the Montana Department of Environmental Quality; and Joe Maurier, Director of Montana Fish, Wildlife & Parks announced completion of a major mine waste cleanup and

restoration project at Spring Meadow Lake State Park, west of Helena, on 2010 Earth Day, Wednesday, April 14, 2010 (Figure 1). The Governor officially reopened the park's popular trail after being closed for more than five months. The trail includes a new section that connects the park to the Montana Outdoor Discovery Center. MTAML's top abandoned mine cleanup priority, the $2.4 million restoration project at Spring Meadow Lake State Park, cleared the way for completion of the Montana Outdoor Discovery Center at Spring Meadow Lake State Park. The 12-acre restoration by MTAML removed 34,000 cubic yards of contaminated soil, employed 13 Montana companies and provided jobs for about 50 workers.

"Montana's restoration economy keeps paying dividends to the people of Montana. Spring Meadow Lake State Park is a prime example. Not only did we get rid of the contamination but we put Montanans and Montana companies to work," said Governor Schweitzer. "And what better time to announce this project completion than during Earth Month and the 40th anniversary of the original Earth Day."

"By cleaning up the park, the risk to visitors and people who work here will diminish. By removing wastes in the water, the water quality in Spring Meadow Lake will improve. We're delighted that Montanans will have a clean and healthful environment to enjoy," said Richard Opper.

The popular park draws 85,000 annual visitors, children's education events and a year-round staff.

Figure 1. Montana Governor Brian Schweitzer celebrates Earth Day 2010 with the reopening of Spring Meadow Lake State Park following MTAML cleanup of mining contamination. Shown left to right: Montana DEQ Director Richard Opper, Abandoned Mine Program Manager John Koerth, Governor Brian Schweitzer, Reclamation Specialist Devin Clary, Remediation Division Administrator Sandi Olsen, and Public Information Coordinator Mary Ann Dunwell. Not shown in photo: Reclamation Specialist and Spring Meadow Project Officer Pebbles Clark.)

TABLE 1. MONTANA ABANDONED MINE LAND RECLAMATION NEEDS AND ACCOMPLISHMENTS SINCE PROGRAM APPROVAL

Problem nature	Unit	Coal-related problems				Noncoal-related problems	
		Abatement status			Total	Abatement status	
		Unfunded	Funded	Completed		UnFunded & Funded	Completed
Priorities 1, 2 and 3 (Protection of public health, safety, and general welfare)							
Clogged streams	Miles	0	0	3.3	3.3	21.7	18.9
Clogged stream lands	Acres	0	0	9.9	9.9	106.1	89.0
Dangerous highwalls	Lin. Feet	0	0	7,910	7,910	0	17,650
Dangerous impoundments	Count	0	0	3	3	0	0
Dangerous piles & embankments	Acres	0	0	72.8	72.8	0	97
Dangerous slides	Acres	0	0	0.9	0.9	0	0
Gobs	Acres	11	0	150.2	161.2	0	0
Highwall	Feet	0	0	1,170	1,170	1	0
Hazardous Equip. & Facilities	Count	0	0	252	252	643	70
Haul Road	Acres	0	0	0.5	0.5	0	0
Hazardous bench	Acres	0	0	0.8	0.8	0	0
Industrial/Residential Waste	Acres	0	0	274.4	274.4	625	282.3
Mine Opening	Count	0	0	1181	1181	275	760
Pits	Acres	0	0	15.8	15.8	1	16.3
Polluted Water: Agric. & Indust.	Acres	0	0	17	17	0	0
Polluted Water: Human Consum.	Acres	73	0	16	89	0	0
Subsidence	Acres	0	0	528.1	528.1	0.1	1
Spoil Area	Acres	0	0	796.2	796.2	0	12.6
Surface Burning	Acres	0	0	127.9	127.9	0	0
Slump	Acres	0	0	16.5	16.5	0	0
Underground Mine Fire	Acres	0	11.4	56.8	68.2	0	0
Water Problems	Gal/Min	100	0	132.5	232.5		

Note: All data in this table are taken from the Abandoned Mine Land Inventory System (AMLIS) 7/29/10.

Mine openings, portals and vertical openings were combined under mine openings. Equipment/Facilities combined with Hazardous Equipment and Facilities.

III. Utilization of OSM Technological Assistance

A. National Technical Training Program (NTTP)

Four MTAML staff members attended five NTTP instructor-led training courses during the EY. One staff member attended the Reclamation Project Management course as an instructor in training.

B. Technical Innovation and Professional Services (TIPS)

Staff from MTAML was provided the opportunity to attend TIPS instructor-led training throughout the reporting period. One MTAML staff member attended a TIPS course.

The Colorado Division of Reclamation Mining and Safety (CDRMS), and Montana Department of Environmental Quality (DEQ) entered into a technology transfer agreement during 2009, and continued this collaboration through 2010. CDRMS demonstrated their "Brass Cap" AML electronic inventory system to MTAML. CDRMS also partnered with TIPS Services to implement the use of mobile computing tablet personal computers in the field for onsite monitoring and electronic data input at AML project sites. During EY 2010 MTAML continued to collaborate with CDMRS to eventually develop and utilize a similar AML electronic inventory system database for MTAML. This technology transfer came about as a result of MTAML & CDMRS participation in the OSM / Atlanta Geospatial Meeting fall 2008, and follow up between the two states participating on the Western Region Technical Team. Western Region technology transfer facilitated travel for MTAML staff traveling to Denver to meet at CDRMS offices. CDRMS and MTAML staff hosted a joint presentation of their success in "*MONTANA-COLORADO SUMMIT / Cross-State Collaborative Application Development*" at the Colorado DRMS offices on April 22, 2010. The presentation was attended by OSM Western Region managers and other State agency database managers.

C. Use of OSM Provided Equipment

MTAML requested use of the TIPS Borehole Camera to use in the evaluation of the Belt Anaconda Mine. The Borehole Camera was delivered to MTAML on August 21, 2009. MTAML also requested use of the FLIR Thermal Imaging Camera. The camera was provided to MTAML on July 6, 2010 and is still in use. MTAML is using the thermal imaging camera to investigate numerous coal mines and outcrop fires in eastern Montana.

IV. Results of Performance Reviews

A. Performance Topics

The MTAML PA was signed in December, 2009 and applies to EY 2010 and 2011. The PA describes the topics selected for review to evaluate the performance of the MTAML program. On-the-ground, performance-based results were the principal focus of program evaluation and documentation.

Topic evaluations reports and individual project reports containing much more detail are on file in the 2010 Annual Evaluation files at the Casper Field Office. As identified in the 2010/2011 PA, the following topics were selected for evaluation: 1) overall reclamation success; 2) emergency investigations and abatement efforts; 3) fiscal and

administrative controls; 4) maintenance of records and integration with the Abandoned Mine Land Inventory System (AMLIS) database; 5) acid mine drainage; and 6) public interaction and outreach. Results of the 2010 evaluations are provided below. The evaluations included field visits to AML projects, interviews with MTAML staff, and reviews of project specifications, grant applications and reports, and AMLIS inventories.

B. Overall Reclamation Success

Our 2010 evaluation of overall reclamation success was conducted to determine if MTAML's reclamation program met project goals. The 2010 review sample included one non-coal reclamation project completed during in 2009, one coal reclamation project completed during EY 2010, and one coal outcrop fire reclamation project conducted in 2010. Additional projects completed during EY 2010 addressed clogged streams/stream lands, industrial/residential waste, gob piles and fires.

We compared MTAML's reclamation to project specifications, results of interagency consultation, and other information. Our evaluation focused on determining whether reclamation met project goals by implementing the scope of work to abate original hazards, complying with conditions (if any) resulting from interagency consultation, and improving overall site conditions compared to pre-reclamation conditions. Generally, we agreed projects met their goals if abatement and reclamation measures were intact and functional, and if no problems compromising those measures were apparent. We considered site conditions improved overall if hazards to public health and safety were abated and associated reclamation reduced environmental problems such as erosion and sedimentation while promoting re-vegetation.

1. Spring Meadow Lake State Park

Spring Meadow State Park is located west of Helena, Montana, just north of Highway 12 in Lewis and Clark County. It included two separate work areas: the eastern part of Spring Meadow Lake State Park, and the northwestern portion of the Montana Wildlife Center, both within Section 23, Township 10 North and Range 4 West, Montana Principal Meridian. In 1981, the State of Montana purchased the 42-acre gravel pit and surrounding acreage as well as an additional 4.1 acre parcel. This property has been developed into Spring Meadow Lake State Park and the Montana Wildlife Center, both administered by Montana Department of Fish, Wildlife and Parks. The State Park is located at the site of a former gravel mining operation and includes the main pit lake, a shallow eastern arm of the lake, and surrounding land. The Montana Wildlife Center is located on a bench south of the State Park. It encompasses one large stone masonry building, the Stedman Foundry, dating back to the late 1800s, several newer buildings, and wire cages used to house and care for injured and orphaned wild animals, including black bears. Past activities at the old buildings prior to use as the Wildlife Center included custom milling of mineral ores as well as casting and molding metal. Ore processing activities contaminated soil and sediment within the area of the current State Park and Montana Wildlife Center sites with arsenic, lead, manganese, and other heavy metals that posed a threat to human health and the environment. Laboratory analytical results showed that the primary contaminants of concern for characterization at the Spring Meadow Lake site were arsenic peaking at 57,500 milligrams per kilogram (mg/kg) and lead at 39,000 mg/kg.

Reclamation activities at Spring Meadow Lake included two separate construction contracts. The first contract was awarded in February of 2009 to remove and stockpile 1,000 cubic yards of sediment and soil from the east arm of Spring Meadow Lake for disposal during reclamation. The excavation and stockpiling of the sediment was completed on February 20, 2009. The other contract was for reclamation construction which began on August 5, 2009, and was completed on December 1, 2009. The project included the removal, screening, and treatment of 51,556 cubic yards of contaminated sediment and soil distributed over a 12 acre area in the State Park and removing, screening, and treating 4,849 cubic yards of contaminated soil by the old Stedman building. The successful bidder for the sediment removal and stockpiling contract was Helena Sand and Gravel of Helena, Montana. The successful bidder for the reclamation contract was Mungas Company, Inc., of Philipsburg, Montana. Total construction costs including both the sediment removal and stockpiling project and the reclamation project were $2,269,272.15.

The Spring Meadow Lake site addressed by this action was reclaimed according to contract design and specifications. Hazards associated with this site have been mitigated to the extent feasible. Tailings and wastes associated with an abandoned smelter were excavated from a lake and associated lands (Figures 2 and 3), and disposed in appropriate repositories located both off-site and on-site. Hazardous equipment and facilities were removed improving safety factors on the site. We conclude that this project met the program's goals of abating hazards and improving site conditions.

2. Shepherd Area Coal Mine Fires

The Shepherd Area Coal Mine Fires Project consisted of active coal burns at two abandoned coal mines, the Shepherd #1 Mine and the Charter Mine, northeast of Billings, Montana. The two mine fire areas were located on private property in the Railroad Creek drainage basin in the southern foothills of the Bull Mountains. CFO issued an ATP for the project to MTAML on December 19, 2009, and the construction contract was awarded to Donnes Construction, Inc., a local construction firm from Shepherd, Montana.

The Shepherd #1 Mine fire (PAD No. MT049027SGA) is located on private land in Section 19, Township 6 North, Range 28 East, Yellowstone County, Montana. Evidence of the coal fire included approximately 2250 linear feet of cracking within a 1.35 acre area that extends across the draw. The deepest cracks were up to 11 feet deep, while most cracks were closed at about four feet below surface. Cracking occurred in the massive sandstone in the lower areas and in soil in the upper areas. Elevated surface temperatures and venting gases were present on the two small ridges that jut out from the slope on the sides of the draw. Based on cracking and surface temperatures, it was determined that there were two hot spots on the site.

One coal mine fire, extending from the central draw and under the southeast ridge was extinguished by complete excavation and flushing of the ashes and embers. The fire under the northwest ridge had burned too deeply to be excavated and flushed. All cracked areas above this fire were excavated to a depth that was projected to be about ten

Figure 2. Reclaimed area north of the Stedman Building, now Montana Wildlife Center.

Figure 3. Public use at Spring Meadow Lake. Reclaimed area is from the far bank to the Stedman Building in center back ground, and extends in width for the entire area of the photograph, east to west.

feet above the bottom of the coal bed then sealed with earth. All other cracks on the site were partially excavated, deep ripped and repaired. The entire site was then graded to natural contour, capped with 9 inches of cover soil, disked, fertilized and seeded. Work was completed in May, 2010 (Figure 4). Final cost of site construction was $232,695.

Figure 4. The Shepherd No. 1 coal mine fire after treatment and recontouring.

The Charter Mine Fire (Pad No. MT049028SGA) is located on private property in Section 24 of Township 6 North, Range 27 East, Yellowstone County, Montana. The site is located in the Bull Mountains on a ridge where a 6 foot thick coal bed had burned several feet into the hillside. Sixty-five feet of cracking, 2-3 feet deep, were associated with the fire. The burning coal seam was completely excavated, flushed with water and mixed with inert soils prior to replacement into the excavation. During excavation, the original adit, extending about 25 feet into the hillside was uncovered, filled and sealed (Figure 5). The entire site was graded to contour, covered with cover soil and topsoil and seeded. Construction was completed in the fall of 2009 at a cost of $10,943.

Figure 5. Charter Coal Mine Fire in early excavation phase.

3. Eastern Montana Coal Outcrop Fires

MTAML extinguished a number of coal outcrop fires in the 2010 evaluation year. These fires occurred as a result of surface range fires that had ignited over the past three years

and burned over small coal seams exposed at the surface. One fire occurred in the Bull Mountains as a result of the 2007 Dunn Mountain Fire. A minimum of ten outcrop fires were observed in the Pine Hills area south of Miles City, some being treated currently. Outcrop fires were extinguished using Prior Balance Replacement funds. Montana did not receive any Outcrop Fire moneys from OSM in evaluation year 2010.

The Marsh Fire was situated in the Bull Mountains north of Shepherd and near the head of a draw that drains southward about two miles to Dutch Oven Creek. The site is located on State owned lands in Section 16 of Township 6 North, Range 28 East, Musselshell County, Montana. Coal outcrop burning was evident along two ravines that are separated by a low ridge. Smoldering and active fire was present underground along the west side of the western ravine, along the west side of the eastern ravine and under a subsided area that extended under the low ridge between the ravines. Numerous cracks, up to five feet wide and ten feet deep, crossed over the ridge and subsided area. Heat and combustion gasses were escaping from a series of small vent holes along one crack. The vents were estimated to be about 23 feet above the burning coal seam.

The entire area above the burning seam was excavated and the fire extinguished. Wastes were mixed with overburden, replaced in their original location, covered with soil and topsoil, and then seeded. 2,600 cubic yards of cover soil and 19,865 cubic yards of overburden were excavated to reach the burning coal seam. Seeding, fertilizing and mulching were completed in May of 2010 at a total cost of $198,161 (Figure 6).

Figure 6. Marsh Outcrop Fire at final contour and mulching.

Numerous small outcrop fires are located in the Pine Hills area approximately ten miles south of Miles City in eastern Montana. These fires erupted as a result of a range fire that passed through the area in 2003. These include the Waldie Coal Fire, the McName Fire, the Okermann Fire, the Tonn No. 1 and Tonn No. 2 fires. The fires were identified by cracking and sloughing of the surface, surface heat differentials, gas and smoke venting and visible open flames (Figure 7).

Treatment was the same in almost all circumstances: excavation of the overburden to the burning coal seam; removal of the burning embers; flush with water; mix with overburden; burial in a prepared pit repository; then covered with overburden and topsoil; graded to contour; and fertilized and seeded.

Figure 7. Use of dry grass to determine flammability at venting fire crack.

A construction contract for the extinguishment of the fires was let in the spring of 2010 to Baxter Construction Company of Billings, Montana. Construction was in progress at the time of the field visit with the Waldie, McName and Okermann fires having been extinguished and reclaimed, and the Tonn #1 fire under construction (Figures 8, 9, 10 and 11). Seven additional coal seam fires were identified in the same vicinity the day of the field visit.

Figure 8. Aerial view of McName Outcrop Fire following extinguishment and contouring.

Figure 9. Aerial view of the Tonn #1 Coal Outcrop Fire with excavation exposing the burning coal bed at the face of the outcrop.

Figure 10. Aerial view of the Tonn #1 Outcrop Fire showing outcrop excavation and repository area for mixing embers with overburden prior to burial.

C. AML Emergency Investigations and Abatement Efforts

Our 2010 evaluation of AML emergency investigations and abatement efforts examined whether emergency criteria of the State AMLR plan were satisfied and the subsequent project(s) were completed as described in the AML Emergency Investigation report. The 2010 review sample included all AML emergency complaints received during the EY, and all emergency projects completed during the EY. During EY 2010, the MTAML did not receive any citizen complaint of an AML emergency.

Figure 11. Spring revegetation against burnt trees from a recent forest fire at the Waldie Coal Outcrop Fire.

D. AML Grant Fiscal and Administrative Controls

The Montana AML Grants administration was monitored throughout EY 2010. Financial Status Reports continue to be submitted within the required timeframes and with no deficiencies noted. A letter-of-credit random sample drawdown request for the Fiscal Year 2009 AML Grant was selected by the WR Grants Specialist for further analysis, and no deficiencies were noted. Interviews conducted with the Montana AML Grant Accounting staff confirmed that recent audits had no questioned or disallowed costs associated with OSM-Montana AML grant(s). The WR Grants Specialist will continue to monitor Montana AML Grants administration in EY 2011.

Montana requested $10,705,147 in Fiscal Year 2010 to continue the operation of their abandoned mine reclamation program. Montana's total available 2010 AML consolidated grant is $10,705,147 consisting of $8,069,086 in Prior Balance Replacement Funds, $2,604,811 in Certified in Lieu Funds, and $31,500 in Federal emergency funds. Prior Balance Replacement Funds are granted from unallocated funds in the United States Treasury to the Montana State Legislature to fund research and mineral related projects of their choosing. The Montana Legislature has not established any non-reclamation activities for the use of these moneys, but instead has designated all funds to the Abandoned Mine Reclamation program for the satisfaction of its mission (Montana Code Annotated, 82-4-1006 Abandoned Mine Reclamation Account). Certified in Lieu funds are distributed to MTAML from unallocated Treasury funds and can be used for any purpose deemed necessary by MTAML subject to limitations from the Montana Legislature.

7.3 percent of the total requested 2010 grant amount is expended on program administration, while 92.4% is spent on project design and construction; 0.3% is designated emergency funding. The grant funding is broken down as follows:

Administrative Costs	$ 785,000
Construction Costs	$ 9,888,897
Emergency	$ 31,250
Total	$10,705,147

Montana has certified that all known coal problems have been addressed, and is now completing high priority non-coal reclamation. Montana addresses any coal problems as they are identified. Montana chooses to phase their funding for larger AML projects over a period of several years to avoid spending a large amount of money and time on one project while other hazards remain untreated. This allows funding to be distributed more equally to different regions of the State each year and still allows MTAML to reclaim the most hazardous abandoned mine sites in a timely manner.

E. Maintenance of Records

1. Data Management System

MTAML maintains an inventory of all abandoned mines identified within the State of Montana. The database is organized by the Kaizem Planning Process. All coal and non-coal sites are listed on a site by site basis recording all relevant data that may later be entered into AMLIS. The database includes site location, type, description, ownership, priority, status and investigative studies. Individual site data is organized by staging through the AML process with each step being identified, i.e., investigation, pre-bid, bid, construction, maintenance and monitor, and emergency. All reports of investigation are annotated and listed on the site entry, and then entered into the database as a PDF file attached to the individual site entry at the stage completed. All actions, status, etc. are tied to the database. Hard copies of all electronic files are maintained as both open files and shelf entries. Entries into AMLIS are derived from data in the state inventory.

2. Integration with Abandoned Mine Land Inventory System (AMLIS)

Our 2010 evaluation of AMLIS determined whether or not information entered into AMLIS agrees with information in the State's files. This topic was mandated for review due to a September, 2004 report issued by Interior's Office of the Inspector General (OIG). The report criticized the accuracy of AMLIS data, based on the OIG review of AMLIS data for four eastern States' AML programs. The OIG's review concluded that AMLIS data did not match data in those States' files and 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." In response to the OIG's recommendation, OSM required its field offices to implement two requirements. The first requirement was 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. The EY 2006 oversight determined Montana has such a system in place that is adequate to ensure accurate data is entered into AMLIS.

The second requirement implemented by OSM in response to the OIG's recommendation stated, "[o]nce these State and Indian Tribe procedures are in place, OSM will annually review a random sample of [PADs] to see if the information entered into AMLIS agrees

with the information in the PAD." As a result, the focus is to ensure the data States and Tribes entered into AMLIS PADs (an integral part of AMLIS) agrees with information in their files. CFO and MTAML chose to include this assurance as part of the EY 2010 oversight. The evaluation goal was to determine whether or not the information Montana entered into AMLIS for projects completed during the evaluation year agrees with information in its files.

MTAML compiles data from EXCEL spreadsheets for input into AMLIS. Upon award of a construction contract after completion of the bidding process, the engineer's estimate and contractor's bid are entered into an EXCEL spreadsheet to maintain cost accounting throughout the duration of the construction project and to prepare contractor invoice forms. The Fiscal Officer maintains control of the EXCEL spreadsheet. At the completion of the project, construction quantities and costs are reconciled by the contractor and engineer, approved by the project manager and transferred to the Fiscal Officer for final reconciliation. The engineer completes the Final Construction Completion Report using the same engineer's estimate and format as originally prepared in the Engineer's Evaluation and Cost Analysis. The Project Officer enters the costing data from the Final Construction Completion Report into the AMLIS PAD completed category.

Completion information entered into AMLIS for the two projects completed during the evaluation year were analyzed and compared to the information contained within the MTAML files. We concluded the information entered by MTAML into AMLIS for these projects agreed with information in its files.

During 2010, the AMLIS system was being redesigned and rebuilt resulting in months of down time where entries could not be made, nor data retrieved. This has resulted in difficulties for the MTAML in entering data onto individual PADs as well as difficulties for the OSM reviewer in retrieving and reviewing data entered into AMLIS. As the new E-AMLIS was not in operation when this report was prepared, data as shown in Table 1 was obtained from the Public Access portion of "Legacy AMLIS."

F. Acid Mine Drainage

Since 1995, MTAML has been monitoring Acid Mine Drainage (AMD) problems in several coal field areas, particularly the Belt, and Tracy-Stockett-Centerville and Sand Coulee areas of the Great Falls Coal Field. Twenty-six AMD problem areas have been identified in these coal fields revealing acid levels ranging from 2.5 to 4.9 pH at mine discharge drains with accompanying high levels of dissolved aluminum, cadmium, copper, iron, lead, zinc and arsenic. While all have had some level of surface feature reclamation performed (i.e. closure of hazardous mine openings, removal of structures, facilities and equipment, removal and burial of coal wastes and slack piles) treatment of AMD problems has eluded success.

Despite the longevity and severity of the problems, relatively little AMD reclamation has been done to date, mainly because there is no long term source of funding to operate and maintain AMD treatment facilities. Treatment of AMD problems has been attempted at a modest scale using passive systems, but ends in disappointing results. Technologies that were tested but failed include aerobic and anaerobic constructed wetlands, limestone channels and anoxic limestone drains. Treatment designs failed due to high concentrations and loads of acidity, metals and sulfates in the AMD waters. Montana's harsh winters also created difficulties. Copious quantities of metal rich precipitates accumulated during winter months when ponded water and vegetation was frozen and

acid waters could not circulate through the system. Accumulated metalliferous precipitates then inhibited regrowth of wetland vegetation during the following summer months.

G. Public Interaction and Outreach

Our 2010 evaluation of public interaction investigated whether or not MTAML is performing public outreach efforts by holding public meetings subsequent to new grant applications. The Montana AMLR Plan requires that the public be afforded the opportunity to comment on abandoned mine reclamation projects. MTAML considers the public an important component of the reclamation program, and conducts public meetings in the community nearest each project. The meetings are well publicized and are held in evenings or on weekends to allow maximum citizen participation. Overall plans for the project area, construction design, maps, overlays and aerial photographs are presented and discussed at each public meeting. In EY 2010, pre-construction public meetings were held for the Bald Butte, Highland, Beal Gulch, and Pony reclamation projects. In addition, a project update meeting was held in Cooke City for the McLaren Tailings Reclamation project.

Individuals may submit comments in writing, or meet with the project officers at any time prior to completion of the comment period on a project. Project officers also meet with affected landowners to explain each project in detail, and keep them informed of the progress throughout the construction phase. Work plans are often altered to conform to comments received from landowners, contractors and the general public.

Informational meetings were conducted for the McLaren, Sand Coulee and Belt projects. These meetings allow for dissemination of more information to stakeholders in any given project area than would be given at a pre-construction meeting for contractors. These meetings are directed at land owners, agencies, organizations, county commissioners, water districts and city councils where people can consider preplanning activities and need to know how AML construction may affect them.

MTAML goes to great lengths to develop and maintain good working relationships with all State and Federal, such as the U.S. Forest Service, the Bureau of Land Management, U.S. Fish and Wildlife Service, the Montana Department of Natural Resources and the Montana Department of Fish Wildlife and Parks. In most cases, these agencies will accept National Environmental Policy Act efforts conducted by MTAML for projects within Federal and State jurisdiction. This practice carries over into relationships with local agencies and groups, and to landowners who have AML sites on their land.

MTAML provides further opportunities for public participation and involvement through its internet website and press releases. MTAML posts Expanded Engineering Evaluation/Cost Analysis Reports of proposed projects, Reclamation Investigation reports, environmental reports, construction bid notices, notices of public hearings of proposed AML projects, final construction reports and "A Guide to Abandoned Mine Reclamation" on its website at http://www.deq.mt.gov/AbandonedMines/default.mcpx. They have also recorded a significant amount of Montana mining history on the website to help mitigate the loss of important cultural resources during the reclamation process and provide that information to educational facilities, and interested parties through the website.

DEQ has procured a new public relations person who is aggressive in releasing news

items to media outlets such as local TV stations, the Helena Independent Record, the Queen City News and on the DEQ website. Recent articles on MTAML activities have included closure of the Trail Head adits, public meetings at Pony and Butte, and various issues being addressed by DEQ. These have included Earth Day at the Capital and the Alumni Job Fair at MSU-Montana Tech campus. MTAML has also participated in several public outreach activities such as the Comet Tree planting event, tours of the Libby Asbestos Mine Reclamation project with a group of Korean mine reclamation specialists, tours of the Spring Meadow Lake Reclamation project with a group of Brazilian metallurgists, and a grand reopening of Spring Meadows State Lake Park by Governor Schweitzer following completion of the Spring Meadows reclamation project. Several MTAML staff members have individually given presentations to high school classes and agency personnel on "Soil sampling and characterization" and "Working for a State Agency."

We have concluded that MTAML is adhering to the public participation and involvement policy of the Montana AMLR plan by holding public meetings regarding potential AML project sites. They have also gone far beyond what is in their plan by conducting tours, participating in public events, giving local presentations and otherwise making their presence and the benefits of the AML program known to the public.

V. Conclusions

OSM has completed its evaluation of topics specified in the Performance Agreement between MTAML and OSM. This evaluation specifically examined six topic areas to evaluate MTAML performance:

1) Overall reclamation Success,
2) Emergency Investigations and Abatement Efforts,
3) AML Grant Fiscal and Administrative Controls,
4) Integration with AMLIS,
5) Acid Mine Drainage, and
6) Public Outreach.

MTAML met the goals of abating hazards and improving site conditions at both coal and non-coal projects. Industrial wastes associated with an abandoned smelter were excavated from a lake and associated lands and disposed in appropriate repositories located both off-site and constructed on-site. Hazardous equipment and wastes were removed and the areas sufficiently reclaimed for development of recreational facilities. Coal mine fires were extinguished, coal exposures and slack were buried, and sites were re-vegetated. All construction adhered to the standards of construction excellence maintained by MTAML. There were no emergency actions in EY year 2010 to review.

Financial Stature Reports were submitted within the required timeframes with no deficiencies noted. Review of the Montana AML Grant Accounting program confirmed that recent audits had no questioned or disallowed costs associated with OSM-Montana AML grant(s).

MTAML has developed a very complex data management program and uses that system to supplement AMLIS. Their data entries into AMLIS are correct and complete to the degree that development of the new E-AMLIS system has hampered data entry.

The MTAML has been regularly monitoring AMD problems in Montana and pursuing possible ways to address the problem in a cost effective manner. They have employed various techniques to address and control AMD but to no avail. MTAML continues to monitor the problem and pursue any alternative to procure funding at the level necessary to resolve the AMD problem.

We have concluded that the MTAML is adhering to the public participation and involvement policy of the Montana AMLR plan by holding public meetings regarding potential AML project sites. They have also gone far beyond what is in their plan by conducting tours, participating in public events, giving local presentations and otherwise making their presence and the benefits of the AML program known to the public.

Overall, MTAML has performed its duties admirably and has adhered to its AML Reclamation Plan. MTAML is recognized by OSM for the performance and quality of its work.

APPENDIX A: State Comments and CFO's Responses to the Draft Annual Evaluation Summary Report

The MTAML offered editorial changes to the report most of which were accepted and incorporated into the report. Two photographs were also offered, one of which was accepted and included into the report. No substantial comments were offered by MTAML.