OFFICE OF SURFACE MINING
RECLAMATION AND ENFORCEMENT

Annual Evaluation Summary Report

for the

Abandoned Mine Lands Program

for

MONTANA

Evaluation Year 1999
(October 1, 1998 to September 30, 1999)

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(Cover Photo: Old Mill Site Elkhorn Mine July, 1999)

Part I. Introduction

The Montana Abandoned Mine Land Reclamation (AMLR) program continues to operate under the guidelines of the Surface Mining Control and Reclamation Act (SMCRA), the approved State Reclamation Plan, the Federal Assistance Manual and associated regulations. The CFO conducts oversight activities on the Montana program, and the topics of this report were selected in a shared commitment process with the State. The Montana AMLR program started in 1980 and for the next ten years the State concentrated on eliminating the hazards from past coal mining. In 1990 they certified that all known coal problems had been addressed and were then authorized to begin reclaiming the multitude of high priority non-coal hazards in the State. However, any abandoned coal hazards must still be given priority funding for reclamation when they are discovered. The evaluation methods used to produce this report are based on OSM Directive AML-22 and the Performance Agreement with the Mine Waste Cleanup Bureau (MWCB). This report covers the period of October 1, 1998 to September 30, 1999.

During this evaluation period Montana, through the Department of Environmental Quality (DEQ), MWCB, has obligated the entire FY99 allocation of funds awarded for the reclamation of abandoned mine lands. In addition, Chart #I lists projects that are ready for reclamation if additional funding were to become available. Both design and construction work is accomplished by outside contractors. A bid process is used to obtain the best qualified contractors at the most cost effective price. Project construction starts as soon as weather conditions will allow heavy equipment to be moved to the sites in the spring and continues until the weather again makes outside work impractical. The MWCB staff spends most of the construction season in the field coordinating and supervising the reclamation activities. Some reclamation may continue into the winter months but the staff primarily spends this time of year coordinating design work and performing other duties necessary to get projects ready for the next construction season. Chart #II depicts the reclamation status of the State AML program by AMLIS keyword. If the AML program expires in 2004, as is now scheduled, the State will not be able to reclaim all the hazards presently housed in the AMLIS. Chart #I lists over seventeen million dollars worth of projects to be reclaimed, and others are still in the investigation phase for possible future reclamation. Chart #III shows the status of the one emergency project that was completed during this evaluation period. This was a subsidence event that opened into the workings of an old underground mine adjacent to the Gardner residence in Fairview, Montana.

One of the most persistent and difficult problems faced by the MWCB is the Acid Mine Drainage (AMD) that is prevalent in the Great Falls Coal Field. AMD occurs in both coal and non coal sites all over the State, but the greatest concentration is in this Coal Field. With the technology presently available, and the limited AML funding, it is improbable that the State will ever be able to properly address this problem. In both coal and non coal sites outside of the Great Falls Coal Field concentration, the State has been very successful in controlling AMD along with the

reclamation of other hazards. Research conducted in the chemical department at the University of Montana has developed a gel substance that in laboratory tests has done an excellent job of filtering contaminants from polluted water. With the assistance of the MWCB, limited field testing was conducted during last evaluation year, and expanded tests were planned for this year. However, the University did not receive the necessary funding from other grant applications to conduct extended testing and the project has been placed on hold until sufficient funding is obtained. Past attempts to reduce AMD have been mostly experimental, but in each case valuable information has been gathered. For example, it was discovered that the water intake into the mines from the surface could be greatly reduced by planting deep rooted grasses, legumes and forbs that absorb a lot of water. However, this is popular wheat growing land and a lot of cooperation with land owners and the Natural Conservation Resource Service will be necessary to change the predominant vegetation pattern of such a large area. The underground workings in this area are very extensive, with a person being able to travel from town to town without coming to the surface in the heyday of the mines.

During this reporting period one citizens complaint was received and investigated by the CFO. It was resolved to the citizens satisfaction, and no problems were found with the State internal controls system. A copy of the complaint and the resolution is on file in the CFO. The relationship with the State Historic Preservation Office has improved notably, and the MWCB is not experiencing any problems with Section 106 cultural resource clearances at this time.

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

SMCRA Surface Mining Control and Reclamation Act
AMLR Abandoned Mine Land Reclamation
MWCB Mine Waste Cleanup Bureau
AMLIS Abandoned Mine Land Inventory System
AML Abandoned Mine Lands
OSM Office of Surface Mining
CFO Casper Field Office
AMD Acid Mine Drainage
DEQ Department of Environmental Quality
BLM Bureau of Land Management
SHPO State Historic Preservation Office
USFS United States Forest Service
EPA Environmental Protection Agency

Part II. Noteworthy Accomplishments

In the past the MWCB has had little success in persuading the BLM and USFS to cooperate in the joint reclamation of projects that were located partially on federally managed land. During this reporting period an agreement was reached with the BLM on two joint reclamation projects, and this has resulted not only in a reduced cost for reclamation, but more thorough elimination of

past mining hazards. Extensive coordination was required between the two agencies and the MWCB is excited over the future joint reclamation possibilities with the BLM. At the Alta Mine site, which is located on both private and BLM land, a historic headframe was removed intact by the MWCB and loaded on trucks for transportation to the BLM State office in Missoula. The headframe is scheduled to be erected in the historic Garnet Mining District that was developed by the BLM, and will be open to the general public.

At the Comet Mine site an entire ghost town was preserved in addition to most of the old mine structures. This remote mine was established in the mountains far from any community, so a town was constructed by the mining company to take care of the needs of the mine workers and their families. When the mine closed everyone moved out, and the town has remained as one of the best preserved historic mining towns in the State. Because of the limited AML funding Montana receives, the reclamation of this project is being completed in phases. For the phase under construction during this evaluation period, a cooperative effort was established with the BLM that allowed the repository for the toxic waste to be located on BLM land. The BLM also contributed funding to the reclamation of the project, cutting the time required to complete the phased work schedule.

The Charter Oaks Project was located entirely on USFS land, and was reclaimed in cooperation with the USFS, Montana DEQ, Montana Department of Fish, Wildlife and Parks and Powell County officials. During periods of heavy rain or snow melt, toxic tailings from the mine site were causing pollution of the Little Blackfoot River to the extent that fish kills were being found. Again, a great deal of coordination was necessary for project completion. After the project was completed the USFS conducted a ceremony honoring the participants in the reclamation, and in particular the MWCB.

Additionally, a Memorandum of Understanding between the Montana DEQ, BLM and the USFS was completed. This MOU sets the stage for continues joint projects and cooperation between the agencies.

Part III. On-Site Evaluation of Reclamation Projects

Visits to abandoned mine sites for this evaluation period were primarily to mines that are scheduled for reclamation in the near future. Five of these pre-construction sites were visited and reclamation design is in various stages of completion on each of them. The hazards at the Gregory Mine, Spring Hill Mine, and Washington Mine are basically the same. These are all non-coal mines, and when they were in operation the quickest and most economical way to dispose of the spoil was to dump it into the adjacent drainages. Heavy rain or snow melt events wash the toxic material in the spoil down into the waterways, causing pollution. Reclamation will remove the spoil from each drainage and place it in a lined repository to prevent any further leaching into the waterways. The Wickes Smelter Site is located near to the town of Wickes, and adjacent to heavily utilized dirt roadways. The smelter site is laced with arsenic residue from the smelting process, and people who breathe the dust are at risk. The structures have all been

removed except for one stone smokestack. The surface around the smelter area, and the smokestack, will be removed and placed in a lined repository. The Elkhorn Mine is located in the historic town of Elkhorn, and care will have to be taken to reclaim the hazards while ensuring that the historic nature of the area is not altered. Reclamation techniques at this site are still in the investigation phase. Design work will be started as soon as initial investigation and testing are completed.

One completed reclamation project was visited, and this was the Nellie Grant Mine. It was another non-coal mine where toxic waste was dumped into the adjacent drainage. The spoil has been removed and placed in a lined repository, and the entire site has been fenced off to protect the new vegetation.

(Moving spoil at the Alta Mine, July 1999)

Another site, the Alta Mine, was visited during the construction phase. The repository was being lined and toxic spoil was being placed on it. The top of the spoil will also be lined, and the liner will prevent any toxic material from leaching out of the pit and back into the waterway. Some of the old mine structures were destroyed by people seeking the supporting timbers and planking for their own construction purposes, and one of the old buildings was removed in the reclamation process because it was in a deteriorated condition and considered to be a hazard.

We also visited the historic mining town of Bannack to look at some of the completed reclamation in the area, and a site that is under consideration for future reclamation. This was the center of early gold mining activity in the region, and it was the first capitol of Montana. The town has been restored by the Montana Department of Fish, Wildlife and Parks to its original condition and attracts a large number of tourists each summer. A considerable amount of reclamation has been done in the area, but safety hazards from past mining still exist. One such

hazard is the Prescilla Mine which the MWCB is presently evaluating for possible reclamation.

(Liner being placed in the repository at the Alta Mine)

No projects were completed during this evaluation period. However, three large reclamation projects were under various stages of construction during the entire season. Two of them are scheduled to be completed before winter sets in, and the third may have to be finished during the next construction season.

IV. Status of the Approved Reclamation Plan

No Plan amendments were initiated during this evaluation period and none are planned for the foreseeable future.

V. Fiscal and Administrative Controls

During the financial oversight of the Montana Title IV program, the CFO reviewed timeliness of grant applications and reports, audits, accounting, payroll and travel records. The State has a U.S. Treasury agreement which includes the AML program and therefore no drawdown analysis was conducted. The agreement was updated to be in force for OSM s 1999 evaluation year. Grants and the required grant reports were submitted in a timely manner. The CFO completed one grant award during the evaluation year and it was made in less than the 60 day maximum time allotment.

An A-133 audit was completed for the two year period ending June 30, 1997. There were no findings or inappropriate costs relative to the Title IV program found during this audit. A second A-133 audit is presently underway, and it will cover a two year period ending June 30, 1999. A review of payroll benefits was also conducted to ensure that charges for personnel and benefits being made to OSM grants were legitimate, and that OSM was not supporting unauthorized activities. No problems were found with the Title IV payroll system.

The State travel and property management systems were also reviewed relative to their approved policies and procedures. Charges and approvals of travel costs were appropriate and property records were adequate. Two projects were sampled to review the bidding system the State is using for awarding construction contracts for AML projects. The review confirmed that the State is following their approved competitive bidding process and the low bidder was selected in both cases.

VI. Post Reclamation Maintenance

The Montana MWCB monitors all completed projects closely for a three year period. If conditions warrant this monitoring period will be extended, but sites are usually adequately revegetated, erosion problems cured, fencing removed and other problems ironed out by the end of the three year period. After the three year period has expired, each site is visited at least once every three years to further assess the reclamation adequacy. All completed sites have been placed in a computer data base so that the immediate status of any site can be obtained. The MWCB has divided the State into four regions with contractors on call in each region to provide immediate response to any maintenance problems that arise on a completed site.

VII. Inventory Maintenance

The MWCB maintains a complete inventory of both coal and non-coal AML sites and they update the AMLIS system at the end of each construction season. All of the MWCB project officers are in the field during the construction season and are supervising multiple projects, so data collection on closed projects and any new sites that are discovered is not compiled until construction winds down in the fall of the year. Computer compatibility problems have also caused delays in entering data into the AMLIS in the past, but hopefully this problem has been taken care of by coordination with the CFO and OSM headquarters personnel.

VIII. Interagency Cooperation

In addition to the interagency cooperation mentioned above in this report, the MWCB is working with other State, local and Federal agencies to develop a Global Information System mapping

program of the Belt Coal Field. This will detail the characterization of the abandoned coal mines to allow a much better perspective of the problem and possible options to reduce it. This is the area where AMD problems have been so extensive that the present technology available offers no solution to the problem, and the Montana annual AML allocation cannot fund expensive treatment options. The mapping system will include present land use, mineral ownership, mine depths, land ownership, water flows into and out of the mines, geology, soils structure and crop potential. It is expected that this information will be of great value when a technology is finally developed to efficiently reduce the AMD in a cost effective manner.

Chart I
Montana
Additional AML Projects That Are Construction Ready If Funding Were Available

Project	Cost	Economic Impact	Environmental Benefit
Cumberland Project	$.15 million	Income: 3.0 million Employment: 11	5 Acres reclaimed
Wicks project	$1.8 million	Income: 4.5 million Employment: 140	Toxic soil removed. 25 acres reclaimed
Elkhorn Tailings	$1.7 million	Income: 3.85 million Employment: 132	8 acres reclaimed
Emery Project	$.5 million	Income: 1.25 million Employment: 39	18 acres reclaimed
Sunrise/January Project	$.5 million	Income: 1.25 million Employment: 39	5 acres reclaimed
Comet Phase II Project	$1.5 million	Income 3.75 million Employment: 107	15 acres reclaimed
Gregory Project	$.8 million	Income: 2 million Employment: 62	6 acres reclaimed
Neilhart Tailings Project	$1.0 million	Income: 2.5 million Employment: 78	5 acres reclaimed
Shoeshoe Project	$.75 million	Income: 1.88 million Employment: 58	20 acres reclaimed
Garnet Gold Project	$.25 million	Income: .63 million Employment: 19	5 acres reclaimed
Great Republic Project	$.4 million	Income: 1 million Employment: 31	5 acres reclaimed
Washington Mine Project	$1.6 million	Income: 4 million Employment: 124	10 acres reclaimed
Champion Mine Project	$.46 million	Income: 1.15 million Employment: 35	5 acres reclaimed
Lily-Orphan Boy Mine	$.35 million	Income: .88 million Employment: 27	1 acre reclaimed
Forest Rose Project	$.8 million	Income: 2 million Employment: 62	10 acres reclaimed
Buckeye Project	$.35 million	Income: .88 million Employment: 27	2 acres reclaimed
Frohner Project	$.5 million	Income: 1.25 million Employment: 39	5 acres reclaimed
Boaz/Grubstake Project	$.3 million	Income: .90 million Employment: 26	2 acres reclaimed
Mammoth Tailings Project	$1.5 million	Income: 3.75 million Employment: 107	10 acres reclaimed
Bald Butte Project	$.7 million	Income: 1.84 million Employment: 54	7 acres reclaimed
Goldsil Mine Project	$1.5 million	Income: 3.75 million Employment: 107	5 acres reclaimed
Total	$17.41 million	Income: 46.01 million Employment: 1324	Restoration of land --- Public safety

Chart II
Montana
Acres and Hazards

HAZARD[1]	OCT 1, 1999 STATUS[2]	FY99 AMLIS ADDITION[3]	RECLAIMED IN FY99[4]	OCT 1, 2000[5] STATUS[6]
BE Bench	0	0	0	0
CS Clogged Stream	37.5	0	6.2	31.3
CSL Clogged Stream Lands	239.7	0	67.4	172.3
DH Dangerous Highwalls	34016.0	0	3,106.0	30,910.0
DI Dangerous Impoundments	4.0	0	1.0	3.0
DP Ind/Res Waste	84.3	0	8.5	75.8
DPE Dangerous Pile & Embk	294.7	0	177.3	72.0
DS Dangerous Slides	0	0	0.9	0.9
EF Equip/Facil	6.0	0	8.0	58.0
GHE Hazard Gas/Explosive	0	0	1.0	1.0
GO Gobs	151.0	0	2.4	148.6
H Highwalls	1,170.0	0	0	1,170.0
HEF Hazard Eqpt & Facility	925.0	0	4	921.0
HR Haul Road	0.5	0	0	0.5
IRW Indust/Resid Waste	1129.1	0	125.5	1003.6
MO Mine Opening	232.0	0	2.0	230.0
P Portal	1268.0	0	2.0	1266.0
HWB Hazard Water Body	9.0	0	0	9.0
PI Pits	36.1	0	1.0	35.1
PWAI Poll ut Water Agri&Ind	19.0	0	1.0	18.0
PEHC Pollut H20 Humn Cons	12.0	0	0	12.0
S Subsidence	637.1	0	82.0	555.1
SA Spoil Area	923.4	0	36.0	887.4
SB Surface Burning	301.9	0	0	301.9
SP Slump	18.5	0	0	18.5
UMF Underground Mine Fire	74.6	0	0	74.6
VO Vertical Opening	725.0	0	40.0	685.0
WA Water Problems	4088.0	0	240.5	3847.5

1. AMLIS keywork
2. A snapshot of the status at the beginning of the year
3. PAD additions, by keyword, during the year
4. Reclamation accomplishments GPRA requirement
5. A snapshot of the status at the beginning of FY99

Chart III

Montana
Emergency Projects

Project Name	Investigation Date	Notification Date to CFO	CFO Response Time (Days)	Reclamation Cost	Const. Start Date	Completion Date	
Gardner Emergency Project	5/10/99	5/21/99	Same Day	$14,918	5/25/99	5/27/99	