U.S. Department of the Interior
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ABANDONED MINE LAND RECLAMATION GEBO-CROSBY MINING DISTRICT

Environmental Assessment WY-010-E03-045

AML HOTS0030

AML HOTS0031

MISSION STATEMENT

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WY/PL-03/014+1640

ENVIRONMENTAL ASSESSMENT

WY-010-E03-045

for

ABANDONED MINE LAND RECLAMATION

GEBO-CROSBY MINING DISTRICT

Prepared by
United States Department of the Interior
Bureau of Land Management
Worland Field Office
Worland, Wyoming

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ABBREVIATIONS

AML	**Abandoned Mine Land Division of the Wyoming Department of Environmental Quality**
BLM	**U.S. Department of the Interior, Bureau of Land Management**
EA	**environmental assessment**
Final EIS	**final environmental impact statement**
HOTS00##	**AML Site numbering system**
RMP	**resource management plan**
SHPO	**State Historic Preservation Office**
WGFD	**Wyoming Game and Fish Department**

ABANDONED MINE LAND RECLAMATION
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INTRODUCTION

The Gebo-Crosby Coal Mining District is located in Hot Springs County, Wyoming, approximately 12 miles north of the town of Thermopolis. The district includes the town of Kirby. Several coal mines operated in the area from 1889 to 1980. Hazards associated with these sites on public lands include open mine adits and subsidence features caused by erosion and the collapse of underground workings. The areas on public lands to be addressed in this environmental assessment (EA) are primarily associated with the Miller and Sanders mines.

NEED FOR PROPOSED ACTION

The Abandoned Mine Land Division (AML) of the Wyoming Department of Environmental Quality and the Worland Field Office of the Bureau of Land Management (BLM), have identified a total of five Priority 1 mine safety hazards on public lands that need to be addressed and alleviated. Priority 1 hazards are identified by the Office of Surface Mining as abandoned mine features having the highest threat to public health and safety.

Following reclamation of the five Priority 1 mine safety hazards identified in this EA, there would be no known remaining Priority 1 hazards on BLM-administered public lands in the Gebo-Crosby Mining District.

During the fall of 2001, AML conducted the first part of this project on adjacent private lands. The work consisted of filling in a sink hole in a stream channel flowing under the Gebo Road (Hot Springs County Road 30). The project stabilized the channel upstream and downstream from the road and a new, higher-capacity culvert was installed under the road (AML Site HOTS0028). Additionally, a subsidence-produced 20-foot vertical opening with unstable sides was plugged and filled on private lands (AML Site HOTS0029). Other work on private land which preceded this project included reclamation of the Becor-Ronco mine. (WY Project AML-5A)

Historic and cultural values on private lands, such as the Gebo town site and cemetery, would not be affected by this project.

The BLM, in coordination with the State Historic Preservation Office (SHPO), is developing a plan for a multi-year program to enhance the public's understanding, awareness, and appreciation of the mining district. This could include signs, brochures, and interpretive routes describing how the mines operated and produced the coal. This program is intended to mitigate or compensate for the potential loss of information about the historic features that are being reclaimed for safety reasons.

CONFORMANCE WITH APPLICABLE LAND USE PLAN

The Resource Management Plan for the Grass Creek Planning Area (RMP) states “Portions of the town of Gebo and adjacent coal mining areas on public land would be managed for preservation and interpretation of cultural and historic values. Management could include actions like development of an interpretive road loop.” (p. 9). Under the Proposed Action (Alternative 1), important cultural and historic features would be preserved, with the exception of the mine entrances being closed for health and safety reasons. The loss of these features would be mitigated through the multi-year interpretive and educational program developed by the BLM, SHPO, and other interested parties. Because many other important cultural and historic features would be preserved on public lands in the mining district, and the project area would be managed for interpretation, the Proposed Action is consistent with the BLM’s Resource Management Plan. Important features being preserved under the Proposed Action include coal slack piles, blasting magazines, load-out features, concrete foundations, housing structures, and other facilities.

The No Action Alternative (Alternative 2) is not in conformance with the Grass Creek Resource Management Plan because none of the coal mining areas on public land would be managed for the interpretation of cultural and historic values. In addition, the alternative is inconsistent with BLM guidance described in Washington Office Information Memorandum 2000-182, which describes the agency’s policy to eliminate or reduce physical hazards and safety risks at abandoned mine lands.

The Complete Reclamation Alternative (Alternative 3) is not in conformance with the Grass Creek Resource Management Plan because none of the coal mining areas on public land would be managed for the preservation of cultural and historic values. However, like the Proposed Action, this alternative is consistent with agency policy to address physical hazards and safety risks at abandoned mine lands.

RELATIONSHIP TO STATUTES, REGULATIONS OR OTHER PLANS

This proposal is subject to Title IV of the Surface Mining Control and Reclamation Act of 1977 which provides for the protection of public health, safety, general welfare, and property from the adverse effects of coal mining practices.

The Secretary of the Interior collects fees from current coal production to be used for reclamation of abandoned coal mines and related activities. Those fees are then issued to state AML programs through grants from the Office of Surface Mining.

When AML receives nominations for reclamation projects from the BLM, the State Mine Inspector, landowners, or other interested parties, the sites are evaluated to determine if they meet the criteria for AML funding. Sites that meet the criteria are inventoried for wildlife, cultural resources, and threatened or endangered species. The AML and BLM conduct on-site visits to affected public lands, and AML develops a proposed reclamation plan.

Through a memorandum of agreement, the BLM and SHPO intend to document the need for a Historic Properties Treatment Plan. This plan will specify the proposed measures to mitigate impacts to cultural and historic features.

Additional guidance on abandoned mine land program coordination between BLM and DEQ is found in Wyoming BLM Instruction Memorandum WY-2003-011, dated December 26, 2002. According to this memo either DEQ or BLM can serve as the lead agency. By agreement between the agencies, BLM has the lead for this proposed project and is responsible for preparing this EA and funding all necessary cultural inventories and related mitigation.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

ALTERNATIVE 1—PROPOSED ACTION

The proposed action is to close various adits and contour an area of dozer cuts on public land, representing all of the known Priority 1 mine safety hazards on public lands in the mining district. Other important features related to historic coal mining on the public lands would be preserved. These include coal slack piles, blasting magazines, load-out features, concrete foundations, housing structures, and other facilities.

The location is described as:

6th Principal Meridian, Wyoming
T. 44 N., R. 95 W.
section 8: N½NW¼, E½SW¼;
section 9: SE¼NW¼.

Reclamation of Sites

AML Site HOTS0024 contains two openings (counted as a single Priority 1 mine safety hazard). Both openings are located adjacent to roads and are readily accessible by the public.

Feature 1 is located near the mine adit. A load-out was constructed with timbers adjacent to the opening. The adit was once closed, but has reopened due to failure of the closure. The opening is 3 feet by 3 feet with approximately 20 feet of vertical drop to the mine workings. The opening represents a significant Priority 1 hazard.

Feature 2 is located approximately 300 yards to the north of Feature 1 and consists of a large opening resulting from subsidence induced by surface runoff. The underground roof support timbers and mine workings are visible in the opening. The adjacent spoil piles and facilities indicate that the underground workings may be extensive. A low-profile grate would be installed in the bulkhead to allow bats to access the workings. Fill material would be brought in from off-site and graded to divert surface runoff from the closure.

These sites were found to be eligible for the National Register of Historic Places (National Register) under 36 CFR 60.4 criteria (a). (48HO221)

AML Site HOTS0027 consists of several dozer cuts near a reclaimed strip mine. The cuts have high walls of up to 40 feet and are very hazardous to anyone driving off road. Fill material would be used to reduce and contour these steep slopes.

AML Site HOTS0030 consists of a 5-foot by 10-foot adit that declines to the north. The portal is accessible but very unstable. Failure of the cribbing near the portal has caused several large pieces of sandstone rock to separate from the roof at the adit face, creating a dangerous potential for roof collapse. The site is visible from the county road and is accessible to the public.

The mine would be closed with a polyurethane foam plug starting several feet into the mine from the opening. Next, a grouted rock bulkhead would be installed in front of the foam plug. The rock bulkhead would be extended (keyed) into the walls, roof, and floor of the adit for a distance of 2 feet to provide support and stability. Finally, the bulkhead would be backfilled using rock salvage from nearby excavations. This would be engineered to preserve, as much as possible, the exterior appearance of the adit. The rock bulkhead and foam plug could be removed in case future access is needed by historians. The area would be graded to divert surface runoff away from the closure. Before this work is conducted, the appearance of the adit would be photographically recorded. The BLM would consult with the SHPO regarding the appropriate level of photo documentation.

AML Site HOTS0031 This adit is partially open and the sandstone rocks above the roof have started slumping. The adjacent spoil piles and facilities indicate that the underground workings may be extensive. The adit would be excavated back to competent material and a cement bulkhead would be constructed to seal off the entrance.

A concrete foundation, depression, firebrick concentration, and load-out ramp immediately adjacent to the adit would be preserved in place. These features would be temporarily fenced and avoided by equipment during closure of the adit.

AML Sites HOTS0030 and HOTS0031 are eligible for the National Register of Historic Places (National Register) under 36 CFR 60.4 criteria (a). (48HO216)

AML Site HOTS0032 This site consists of a small 1-foot by 3-foot subsidence opening located near the original mine opening. The subsidence allows access to the underground mine workings.

This site is not eligible for the National Register (48HO265)

Interpretation of Historic Values

Two interpretive signs would be installed on public lands during the initial interpretive program at the Gebo-Crosby Mining District. Both signs would be the BLM standard design, approximately 3 feet by 2 feet. One would be placed at a vantage point above the town site of Gebo and would incorporate historic photos and town plat maps in addition to a brief narrative about the mining district. The other would be placed at the Miller Mine load out and would be used to interpret the west end of the mining district.

Modern trash and abandoned equipment would be removed from the mining district. Trash removal would be monitored to ensure that important cultural and historic resources remain in place.

Future interpretive efforts may include assisting the Hot Springs County Museum and Cultural Center in developing additional interpretive displays relating to the mining district, developing of a web page providing information about the mining district to a larger audience, and developing an interpretive loop through the mining district for bicycle and/or ATV access. These interpretive efforts are in compliance with Executive Order 13287, Preserve America, signed by President Bush, March 3, 2003. This Executive Order emphasizes the importance of providing public education opportunities relating to cultural resources on public lands, and working with local governments. These interpretive elements would be completed within 5 years.

Future Reclamation

A coal mine fire located near the strip mine would be trenched if funding becomes available. Trenching along the progressing edge of the fire may be effective in extinguishing the fire and protecting other mine workings. Additional analysis, including a cultural resources inventory of the area to be trenched, would be conducted.

Any new hazardous areas on public lands that result from future erosion or subsidence would be addressed case-by-case.

Access and Reclamation Practices

Prior to reclaiming the sites described above, AML would flag the routes to be taken by heavy equipment between existing roads and the sites. These routes would be inventoried for the presence of cultural and paleontological resources before being approved for use.

All areas of surface disturbance would be seeded using the following seed mixture.

Common Name	***Scientific Name***	**Variety**	**Lbs (PLS)* per Acre**
western wheatgrass	*pascopyron smithii*	Rosana	4.0
slender wheatgrass	*elymus trachycaulus*	Prior	3.0
thickspike wheatgrass	*elymus lanceolatus*	Critana	3.0
streambank wheatgrass	*elymus lanceolatus*	Sodar	3.0
Russian wildrye	*psathyrostachys juncea*	Bozoisky	3.0
needle-and-thread	*stipa comata*		4.0
big sagebrush	*artemesia tridentata*	Wyomingensis	0.20
blue flax	*linum lewisii*	Appar	1.0
blanket flower	*gaillardia aristata*		1.0
white yarrow	*archillea millefolium*		0.1
		Total Pounds PLS	22.3

* pure live seed

All seed would be certified as weed free. No mulch or fertilizer would be used. The seed would be applied with a pitter that gouges shallow pits and disperses seeds at the same time. Seeding would take place between September 15 and prior to frost, or in the spring after the frost leaves the ground and before April 15. If noxious and/or invasive weeds are encountered, the Hot Springs County Weed and Pest Office would be contacted for expertise and directions. The reclaimed sites would be monitored on a regular basis for noxious and/or invasive weeds.

ALTERNATIVE 2 - NO ACTION

Under this alternative the proposed action would not be approved. No actions would occur to abate the hazards on public lands.

ALTERNATIVE 3 – COMPLETE RECLAMATION

This alternative would remove all evidence of the historic mining activities on the public lands including features such as coal slack piles, blasting magazines, load-outs, concrete foundations, housing structures, and other facilities.

OPTIONS CONSIDERED BUT NOT ANALYZED IN DETAIL

The installation of a bat grate was considered at the site listed as HOTS0030. However, the relatively small amount of spoil material outside the opening indicated that the underground workings may not be extensive enough to provide bat habitat. The larger areas of spoil material outside HOTS0024 (Feature 2) suggest more extensive workings and a higher potential for bat habitat. Therefore, the option to place a bat grate at HOTS0030 was rejected, in favor of a bat grate at HOTS0024.

Another option would remove coal slack piles from the sides of a drainage near HOTS0032 and use the material to backfill that site's Priority 1 subsidence feature. The slack piles were tested in 2001 and were not found to contain hazardous materials. The piles are also physically stable and unlikely to erode; therefore they pose less of a threat to water quality, if left in place. Finally, the slack piles have educational value for interpreting the area's coal mining history. For these reasons, it was decided not to remove the piles.

AFFECTED ENVIRONMENT

GENERAL SETTING

The Gebo-Crosby Mining District is located along the southeastern edge of the Bighorn Basin, a large intermountain basin within the Rocky Mountains of northwestern Wyoming. The Bighorn Basin is approximately 200 miles long and 50 miles wide with an area of 10,000 square miles.

The climate in the area is semiarid, receiving 5 to 12 inches of precipitation per year. Temperatures range from above 100δ F. to well below 0δ F. Air quality is excellent except for the occasional occurrence of wind-borne dirt at ground level.

The Gebo-Crosby Mining District consists of 17 coal mining-related sites in the south-central portion of the Bighorn Basin. The area encompasses approximately 34 square miles in Hot Springs County. The mining district was the largest and most extensively developed coal mining area in the Bighorn Basin. The coal was initially discovered in the late 1880s by Henry Cottle, John Jones, and "Dad" Eads. The area was identified by Cassius Fisher of the U.S. Geological Survey during his systematic survey of the basin for coal in 1903, as one of five general areas with potential for commercial development. Production in the mining district began in 1889 with the opening of the Jones Mine and ended in 1980 with the closure of the Becor-Ronco Mine.

No prehistoric cultural resource sites have been identified within the proposed project area, largely because of the mining activity. Areas near the mining district that are undisturbed by construction have produced evidence of more than 12,000 years of human use. It is likely that undisturbed areas could contain prehistoric cultural materials.

The northern harrier, golden eagle and loggerhead shrike (Migratory Birds of High Federal Interest) have been observed in the area. It was determined that the birds were hunting in the area and nest elsewhere. Three inactive raptor nests lie outside of the project boundary.

Five species of bats, all classified as Category 2 candidate species, have been identified by the U.S. Fish and Wildlife Service as potentially present in the area. These species include the spotted bat, Townsend's big-eared bat, long-eared myotis, long-legged myotis, and small-footed myotis. Other more common bat species may also be present.

Bat surveys were conducted by the Wyoming Game and Fish Department (WGFD) on the Ronco and Osborn mine areas in August 1994. At that time, the Ronco Mine adit was subsided and the WGFD reported it provided no bat habitat. The Osborn Mine main adit was open and used by bats, however. The Osborn Mine is located on state land in section 16, T. 44 N., R. 95 W. near the Ronco Mine. The results of a mist net survey at the Osborn Mine main adit documented the presence of Townsend's big-eared bat, small-footed myotis, and the big brown bat. According to one researcher, bats appeared to be using the mine as both a day roost and night roost and perhaps for rearing young. But, as of June 1995, the Osborn Mine main adit was reclaimed and no longer provided bats with access to the mine.

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This section describes elements of the environment which may be affected by the alternatives.

The following describes the mandatory critical elements and the relevant authority for those elements.

Mandatory Critical Elements	
Element	**Relevant Authority**
Air Quality	*The Clean Air Act as amended (42 USC 7401 et seq.)*
Areas of Critical Environmental Concern	*Federal Land Policy and Management Act of 1976 (43 USC 1701et seq.)*
Cultural Resources	*National Historic Preservation Act as amended (16 USC 470*
Environmental Justice	*E.O. 12898, Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations, 2/11/94*
Farm Lands (prime or unique)	*Surface Mining Control and Reclamation Act of 1977 (30 USC 1201 et seq.)*
Floodplains	*E.O. 11988, as amended; Floodplain Management, May 24, 1977*
Invasive, Non-native Species	*Lacey Act, as amended; Federal Noxious Weed Act of 1974, as amended; Endangered Species Act of 1973, as amended; E.O. 13112, Invasive Species, 2/3/99*
Native American Religious Concerns	*American Indian Religious Freedom Act of 1978 (42 USC 1966)*
Threatened or Endangered Species	*Endangered Species Act of 1973 as amended (16 USC 1531)*

Mandatory Critical Elements	
Element	**Relevant Authority**
Wastes, Hazardous or Solid	*Resource Conservation and Recovery Act of 1976 (42 USC 6907 et seq.); Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended (42 USC 9615)*
Water Quality (Surface & Ground)	*Clean Water Act of 1987; Safe Drinking Water Act Amendments of 1996; E.O. 12088, Federal Compliance With Pollution Control Standards (Amended by E.O. 12580, Superfund Implementation), 10/13/78, 2/23/87; E.O. 12372, Intergovernmental Review of Federal Programs, 7/14/82*
Wetlands/Riparian Zones	*E.O 11990, Protection of Woodlands, May 24, 1977*
Wild and Scenic Rivers	*Wild and Scenic Rivers Act as amended (16 USC 1271)*
Wilderness	*Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.); Wilderness Act of 1964 (16 USC 1131 et seq.)*

ALTERNATIVE 1—PROPOSED ACTION

None of the alternatives would affect Areas of Critical Environmental Concern; Environmental Justice; Farm Lands (prime or unique); Floodplains; Native American Religious Concerns; Threatened or Endangered Species; Wetlands/Riparian Zones; Wild and Scenic Rivers; or Wilderness. Some of these elements do not occur in the proposed project area, and for some that do occur, the types of anticipated actions and the mitigation measures that would be applied are the reasons that the effects would be insignificant. Other elements of the environment in the proposed project area that may be affected are described below.

Air Quality

During periods of active reclamation there could be an increase of dirt and dust. Water would be used for dust control and for compaction.

Cultural and Historic Resources

The Final EIS for the Grass Creek Resource Management Plan (June 1996) addressed the effects of the proposed action on cultural and historic resources. The planned interpretive efforts would increase public education, awareness, and appreciation of the old mining district. Although visitor use would climb about three percent annually, there would be little or no increase in vandalism to cultural and historic resources. (Final EIS, pgs. 156, 166.)

Invasive, Non-Native Species

Invasive, non-native weed species would increase for a year or two in the small areas that are disturbed by reclamation activities. After two growing seasons, however, most of these invasive, non-native species would be gone.

Wastes, Hazardous or Solid

Coal slack piles near AML Site HOTS0032 were tested in 2001 and determined not to be hazardous waste, therefore they would be left in place for their interpretative value. No non-mine solid wastes would be buried on-site during the reclamation project.

Water Quality (Surface and Ground)

Water quality would be improved by reducing the amount of erosion that is occurring within the proposed project area and reducing sedimentation within the river system.

Recreation

The area is widely used by the local community. The placement of interpretive signs would increase visitor use and increase public awareness regarding the cultural and historic resources.

Livestock Grazing and Wildlife Habitat

Reseeding the disturbed areas would improve forage for livestock and wildlife. The use of a bat grate at HOTS0024 would protect potential bat habitat.

Cumulative Impacts

The proposed action would increase vegetation for livestock and wildlife. The Priority 1 hazards to human health and safety would be abated. Surface water quality would be improved by the contouring of slopes and the establishment of vegetation. Important historic features would be protected and the public would learn more about the history of the mining district through interpretive efforts.

Residual Impacts

With timely reclamation and continued monitoring of vegetation, residual impacts would be negligible or nonexistent.

ALTERNATIVE 2—NO ACTION

Under this alternative, mine adits would be left open. Hazards to human health and safety would continue. Environmental degradation from continued subsidence and erosion would escalate.

ALTERNATIVE 3—COMPLETE RECLAMATION

Under this alternative the potential for on-site interpretation of the history of the mining district would be lost. Environmental degradation from subsidence and erosion would be reduced compared to the other alternatives. Public health and safety would be enhanced by the removal of all Priority 1 hazards.

CONSULTATION AND COORDINATION

On January 29, 2003 the Worland Field Office distributed a media release asking parties interested in this project to identify themselves. This EA is being distributed for a 30-day comment period before BLM makes a decision. Copies of the EA are being sent to local and state governments and interested parties.

AGENCIES AND PERSONS CONSULTED

The following agencies or persons were consulted.

PHC Reclamation Inc., Chris Walla, Project Manager–Engineer,
Wyoming Department of Environmental Quality, Abandoned Mine Land Division, Ernie Robb, Project Officer,
Wyoming Office of Federal Land Policy
Wyoming State Historic Preservation Office
Wyoming State Mine Inspector

The project was also discussed with the Hot Springs and Washakie county commissioners.