

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

- A. EXAMPLE PROJECT KEY NUMBER: **AML 17 H Statewide Coal Reclamation Project**
- B. TITLE AND LOCATION (*City and State*): **Lincoln, Sweetwater, Uinta, Sublette, and Teton Counties, Wyoming**
- C. YEAR COMPLETED - PROFESSIONAL SERVICES: **ongoing**
- D. YEAR COMPLETED - CONSTRUCTION (*If applicable*): **ongoing**
- 23a. PROJECT OWNER'S INFORMATION - PROJECT OWNER: **Wyoming AML**
- 23b. PROJECT OWNER'S INFORMATION - POINT OF CONTACT NAME: **Jeff Meena, AML Project Officer**
- 23c. PROJECT OWNER'S INFORMATION - POINT OF CONTACT TELEPHONE NUMBER: **307 473-8160**
24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*Include scope, size, and cost*): **Follows**
25. FIRMS FROM SECTION INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION (<i>City and State</i>)	(3) ROLE
BRS Inc.	Riverton, WY	Site Investigation, Design, CM

A brief project description follows:

AML Project 17H, Statewide Coal Reclamation encompasses multiple project phases throughout Southwest Wyoming. The main phases are Phase 1, Kemmerer Area, Phase 2, Sweetwater County, and Phase 3, Evanston Area. Each phase has multiple contracts completed, in progress, or planned.

The objective of the project is to eliminate the variety of hazards at the different sites related to abandoned underground and surface coal mines. These hazards include mine portals, mine subsidence, vertical shafts, mine highwalls, dangerous piles and embankments, underground coal fires, and mine spoils causing environmental degradation. Many of the sites are located near populated areas and most of the sites see high recreational use. The general method for reclamation of mine subsidence is to excavate the surface expression of the subsidence down until the mine workings are reached. A bulkhead is then constructed in the mine workings to prevent further subsidence, the excavation backfilled, and the area site graded to promote positive drainage away from the feature. Coal fires are addressed in much the same manner, with as much of the active fire excavated and the excavation backfilled with compacted material to limit air flow to the fire. Mine highwalls are reclaimed by backfilling the remnant pit to remove the hazard.

Highwall removal projects have involved the use of Carlson Natural Regrade™ software to design a geomorphically diverse, natural appearing landform. The final grade design consists of numerous secondary channels and ridges that feed into main meandering channels. GPS controlled equipment is used to create the final grade. This process has also been used on other 17H reclamation projects where large scale subsidence features have disrupted the natural drainage. After the reclamation and backfilling is completed the Natural Regrade concept is used to create a sustainable and more natural appearing topographic features and surface drainage.

The table below lists the different phases and contracts that have been completed and the types of reclamation completed.

Phase	Contract	Type of Reclamation	Construction Cost
Phase 1, Kemmerer Area	A	mine subsidence, coal fires, environmental degradation	\$801,695.18
	B	mine subsidence, water impoundments, erosion control structures, environmental degradation	\$611,705.89
	C	mine subsidence, coal fire, hazardous water body, dangerous pile, environmental degradation	\$698,004.08
Phase 2, Sweetwater Co.	A	mine subsidence, environmental degradation	\$890,695.66
	B	highwall removal, environmental degradation, drainage restoration with natural regrade design	\$1,887,371.59
	B-II	highwall removal, environmental degradation, drainage restoration with natural regrade design	\$1,971,960.27
	C	mine subsidence, environmental degradation	\$1,979,842.47
	D	mine subsidence, environmental degradation	\$1,630,176.30
	E	mine subsidence, coal fire, environmental degradation	\$871,749.05
Phase 3, Evanston Area	A	mine subsidence, coal fire, environmental degradation	\$641,012.74

Many of the reclamation sites are located at historic mine that contain historically and culturally important artifacts and structures. BRS Engineering works closely with AML archeologists during reclamation to not only insure no artifacts are damaged, but to stabilize and preserve the artifacts whenever possible.

The willingness of BRS Engineering to preserve historic artifacts combined with the development of an innovative method of stopping the progression of an underground coal fire during the 17H-1A Project resulted in the project being selected as the 2006 AML Reclamation Project of the Year.

Open Subsidence, Glencoe Site, Kemmerer



Open Mine Workings, Superior



Large Scale Excavation, Evanston Area



Coal Fire Excavation, Kemmerer



Channel Construction for Natural Regrade Design



Completed Natural Regrade Channel



Restored Portal, Superior



Restored Portal, Kemmerer



The scope and breadth of AML Project 17H encompasses all aspects of coal mine reclamation including site investigation, site prioritization, design, and construction management. Projects have included underground and surface coal mines, mine subsidence, coal slack and related mine waste, historical preservation, stream restoration, work in or near populated areas, and work in remote and environmentally sensitive areas.