

ABSTRACT
Geomorphic Reclamation of Abandoned Coal Mines
Lionkol Mining District
Sweetwater County, Wyoming



Presenter:

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Summary:

Following the successful pioneering of Natural Regrade™ technology for geomorphic surface mine reclamation efforts in 2007, the Wyoming AML Division and their Project Engineer, BRS Inc. of Riverton, Wyoming, applied this surface reclamation approach to the Lionkol Project located near Rock Springs, Wyoming in Sweetwater County. The completed project created a sustainable, stable, and diverse landscape which is compatible with surrounding native landforms.

The Lionkol Project is located within a historic coal mining district which was extensively mined underground from the early 1900's through the 1940's, then followed by open pit mining which continued into the early 1970's. The project was completed in four phases over a six year period, with the final phase completed in the fall of 2013. Overall the project reclaimed 320 acres of intensely disturbed mine lands including four open pit complexes, associated mine spoils, and numerous underground mine portals, shafts, and subsidence features. In addition, over 5 miles of degraded mainstream drainages were restored as shown on the following figure.

The Lionkol Project was supportive of efforts by the City of Rock Springs to attenuate peak runoff events critical to flood plain designations, and was integrated with BLM efforts at its Wild Horse Facility to control surface runoff in compliance with WYPDES regulations.

Design challenges, hydrologic results, modifications in design approach, and innovations are discussed as well as performance evaluations of the channels and a summary of lessons learned for future efforts.

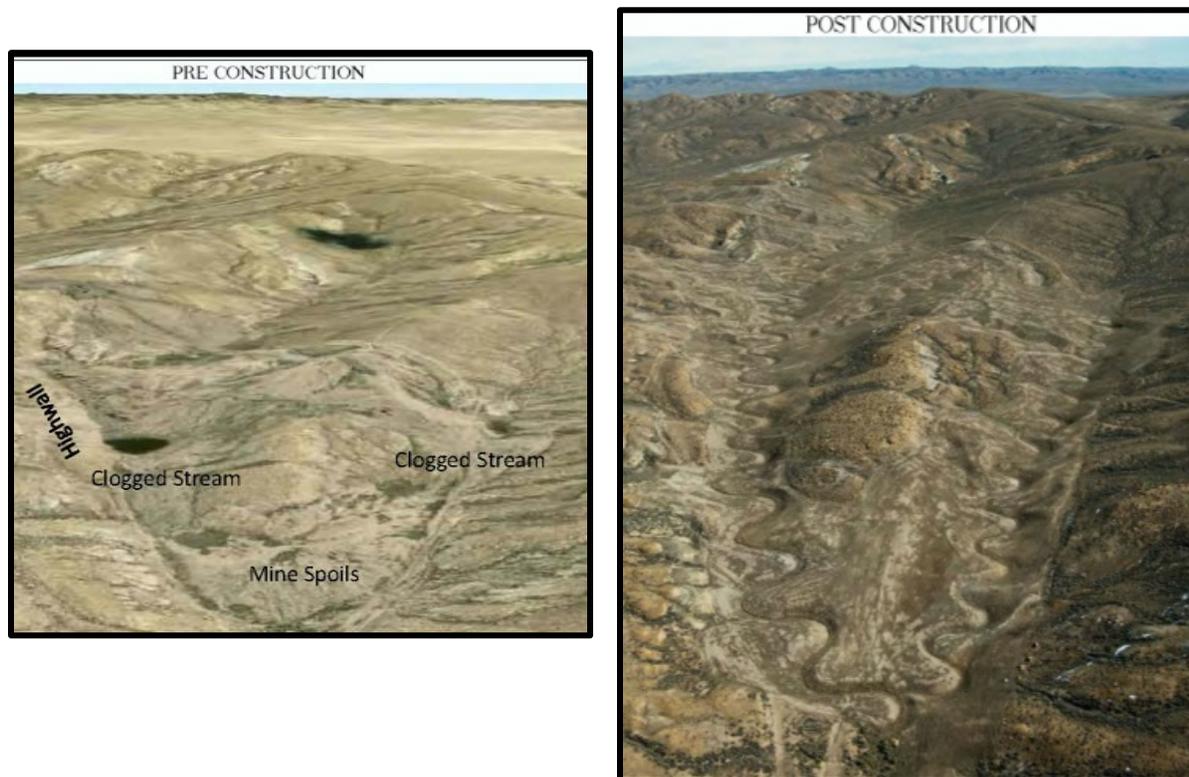


OVERALL PROJECT LOCATION			
SCALE: 1" = 2,000'	DATE: 5/28/13	REV. NO.: 1	NO.:
DRAWN BY: CAG	RECORDED BY:		
APPROVED BY:			

NATURAL REGRADE RECLAMATION PROJECTS
AML PROJECT 17 H-2
SWEETWATER COUNTY WYOMING

NO.	REVISION DATE:	DATE BY:	ISSUED FOR:
	LAST PLOT DATE: 5/28/13		
	CAD FILENAME: DATA\17H\NATURAL REGRADE PROJECTS\OVERALL.dwg		

The following figures depict pre and post construction views of the Reliance No. 3 mine portion of the project.



In summary, the Lionkol Project fully implemented new methods in geomorphic mine land reclamation to achieve a sustainable reclaimed landscape which blends with native topography and provides for long-term erosional stability. The project was funded primarily through the Office of Surface Mining with additional funding provided by BLM. The project addressed hazards and environmental degradation related to historic surface and underground coal mining while preserving historic values. Additional benefits were accrued directly by the City of Rock Springs and the BLM as a result of this project. The project is a successful application of geomorphic techniques to sustainable mine land reclamation.