

# STREAM RESTORATION INITIATIVE AT THE JEWETT LIGNITE MINE<sup>1</sup>

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**Abstract:** In 2009 Texas Westmoreland Coal Company embarked on a mission to not only improve the stream restoration efforts at the Jewett Mine, but to build a process that would be recognized as the premier stream restoration program in the US. This ambitious effort stemmed from the awareness being placed on the growing emphasis across the country relating to the overall stream function, stream protections and the obstacles faced with wetland mitigation. The overall process involves a collaborative effort between several sources including the regulating bodies involved with the mine reclamation, academia, regional consulting engineers, local land owners, and the Jewett Mine personnel. As with all best practice process, excellence begins with planning and design. Planning includes the gathering of baseline data of the impacted stream channel and is a vital step in the process. The design component feeds from this data and ensures that a natural channel is developed for construction. The construction process has been greatly enhanced by the advent of dozer GPS through which digital terrain models can be used to guide the operator in building the envisioned plan. Additionally, significant advancements achieved through the use of innovative technologies have resulted in final streams that exhibit increased geo-fluvial characteristics and require far less reinforced structures. Enhanced revegetation efforts utilizes several other “best practice techniques” such as hydromulching with native grasses, the planting of high quality hardwood species and the use of specialized irrigation to ensure a high success rate in any condition. The Jewett Mine has paved a new path forward with respect to stream restoration by studying the stream channel prior to disturbance, developing a plan that honors the original system and transitioning that plan into an effective means of construction. By this, the Jewett Mine is confident that it is living one of their core values - environmental excellence.

**Additional Key Words:** wetland mitigation, digital terrain models, hydromulching, irrigation

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<sup>1</sup> Oral paper presented at the 2013 National Meeting of the American Society of Mining and Reclamation, Laramie, WY *Reclamation Across Industries*, June 1–6, 2013. R.I. Barnhisel (Ed.). Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502

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