

STREAM RESTORATION AT MIDWEST SURFACE COAL MINES – KEYS TO SUCCESS¹

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Abstract: Stream Restoration at Midwest Surface Coal Mines utilizing some form of natural channel design is a fairly modern concept that has precipitated from the drastic changes in the way the Clean Water Act (CWA) is being regulated. Common past reclamation practice was to minimize excess sedimentation from leaving the site through terracing, fescue lined grass waterways, fescue-lined straight-cut channels, permanent sediment basins and other best management practices. Keys to success for current CWA Section 404 permit mitigation requirements utilize either stream restoration on an existing stream that was not mined through or new stream construction in mine reclamation. Keys to success begin prior to the mining process and continue through the Section 404 final release process.

What does the stream mitigation planning process involve? How will a stream design be completed? How will the stream design get from the computer to the ground? How will the stream be restored or constructed to ensure long term sustainability? This presentation will address these issues, and processes involved primarily in new stream construction. Prior to the mining, process plans must be developed which restore the watershed into suitable terrain. During the mining process, the reclamation grade plan should be carefully followed or adjusted to ensure proper floodplain belt widths and slopes. Stream construction can then commence by skilled contractors or mine personnel utilizing the completed design. During the construction phase, stream structure, riffles and pools are installed in pre-determined locations. Proper installation techniques are required to make sure that the stream will be self sustaining for the long term. Several years of monitoring are then required to demonstrate the success (or failure) of the stream project prior to release from the Section 404 permit. The goal of this presentation is to provide a better understanding of the keys to success, benefits and challenges for Stream Restoration at Midwest Surface Coal Mines.

Additional Key Words: Natural stream design, sediment control, and in-stream structures

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