PROJECT PROFILE

Project Basics

Project Name: Coal Mine Closure Channel Stability Project
Installation Date: May, 2014
Product Type: Western Excelsior Xtreme Armor System™ (XAS) utilizing PP5-Xtreme with Percussion Driven Anchors (PDAs)
Project Location: Greater Dallas, TX Area

Project Overview

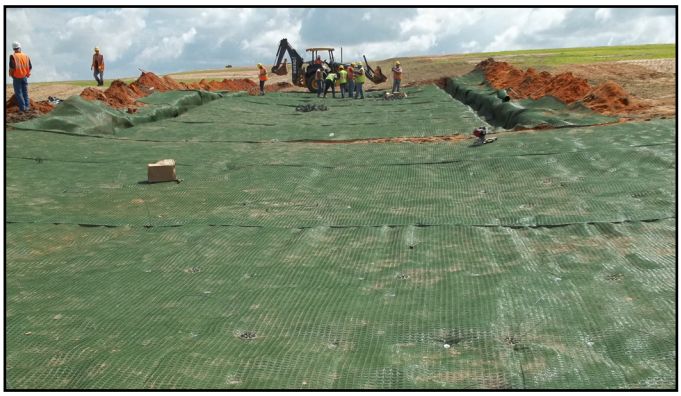
The process of mine closure and reclamation is challenging and invites numerous conflicting objectives and requirements. In the case of a Dallas, TX area coal mine, soil moved to uncover and retrieve rich coal reserves were deposited on site for years, creating large hills of very fine sand. The sand could be easily eroded (sometimes causing gullies several feet deep) and deposited into downstream waterways. Typical storms were easily displacing the waste sand resulting in compliance issues. Rock and concrete solutions were not allowable by permit, however, a permanent solution was required. Enter Xtreme Armor System. The rainfall collected on the long, steep, erodible slopes was intercepted by a network of drainage channels reinforced by XAS. With the stormwater concentrated in protected channels, the flow could be safely delivered to the receiving waters. The XAS solution was permanent with minimal visual footprint and met the ecologically friendly requirements of the permit.

Installation

XAS was installed over the prepared and regraded sloping channels. Two foot deep cut-off trenches were installed across the channel to intercept flow under the mat and bolster the protection of the extremely porous, sandy soils. PDAs and pins were specifically selected to provide firm anchorage on site and installed to secure the HPTRM. After the HPTRM system was in place, the area was seeded and sprigged (a vegetation method utilizing small, pre-sprouted plantlings). This vegetation approach would offer a two-fold method in the hopes of establishing a dense stand of vegetation in the sandy soils.

Performance

After the XAS system was installed, the site experienced additional record rainfall months. Where other TRMs had failed, the XAS system remained completely stable, the vegetation established vigorously, and minimal additional impacts to the system were seen.



Soft, powdery soils resulted in deep gullies on the coal mine closure (top). The XAS was installed to protect the soils, reestablish vegetation, and carry site runoff (middle). Even with additional storm events, the site flourished with minimal environmental impacts (bottom).

Western Excelsior
4609 E. Boonville-New Harmony Rd., Evansville, IN 47725
(866) 540-9810 | www.westernexcelsior.com