InstaTurf Project Spotlight

- **Project Name: Peabody Coal Constructed Streambanks Stabilization**
- **Product: InstaTurf™ ShearForce10™ ECTRM**
- **Application: Overwinter Protection and Vegetation Establishment on Constructed Streambanks**
- **Project Owner: Peabody Coal, Somerville IN Mine**
- **Regulatory Oversight: Army Corps of Engineers**
- **Time Frame: Installation of ShearForce10 on Oct 25, 2018**
- **Site Description:**
  - **Standard cool season annual/perennial grass and legume mix**
  - **Silty Clay Loam soil**
  - **Approximate 6ft wide stream channel bottom (left unprotected for natural substrate)**
  - **Stream channel bottom gradient <1%**
  - **Variable gradient sideslopes (protected with ShearForce10 ECTRM)**
  - **Drainage from 120 acres of reclaimed mineland**
  - **Over 30 inches of rainfall from Oct 25, 2018 through April 30, 2019**
- **Objective: Test application for the InstaTurf ShearForce10 ECTRM at protecting the highly erodible banks of a constructed stream channel through reclaimed mineland over the winter months, while establishing permanently reinforced vegetation.**

Peabody Coal Streambank Stabilization Project

InstaTurf ShearForce10 ECTRM Installed October 25 on seeded streambank

Peabody Coal Streambank Stabilization Project

The ShearForce10 did an excellent job of protecting the streambanks through a two inch rainfall on Nov 1, which generated bank-overtopping flows. Note the grasses starting to emerge thru mats in winter.

Peabody Coal Streambank Stabilization Project

Unusually heavy rains throughout the fall, winter and spring months flooded the stream channel on numerous occasions

Peabody Coal Streambank Stabilization Project

ShearForce10 effectively armored the streambanks through all flood events, sustaining a good stand of vegetation by April 30

Coconut Erosion Control Blanket On Peabody Coal Streambanks

The two inch rainfall that occurred one week after installation severely damaged coconut erosion control blankets installed on other sections of the stream channel and initiated significant bank erosion

Coconut Erosion Control Blanket On Peabody Coal Streambanks

Many banks along the stream channel where coconut blankets had been installed were on the verge of collapsing by early spring due to severe undercutting

Peabody Coal Streambank Stabilization Project

The ShearForce10's simulated turf structure captured sediment in stream flow which further enhanced the mats' erosion control capabilities by locking down material between anchor points

InstaTurf SHEARFORCE 10 Soft Armor Rock Solid Protection

Peabody Coal Streambank Stabilization Project

Vegetation growth in mid-March

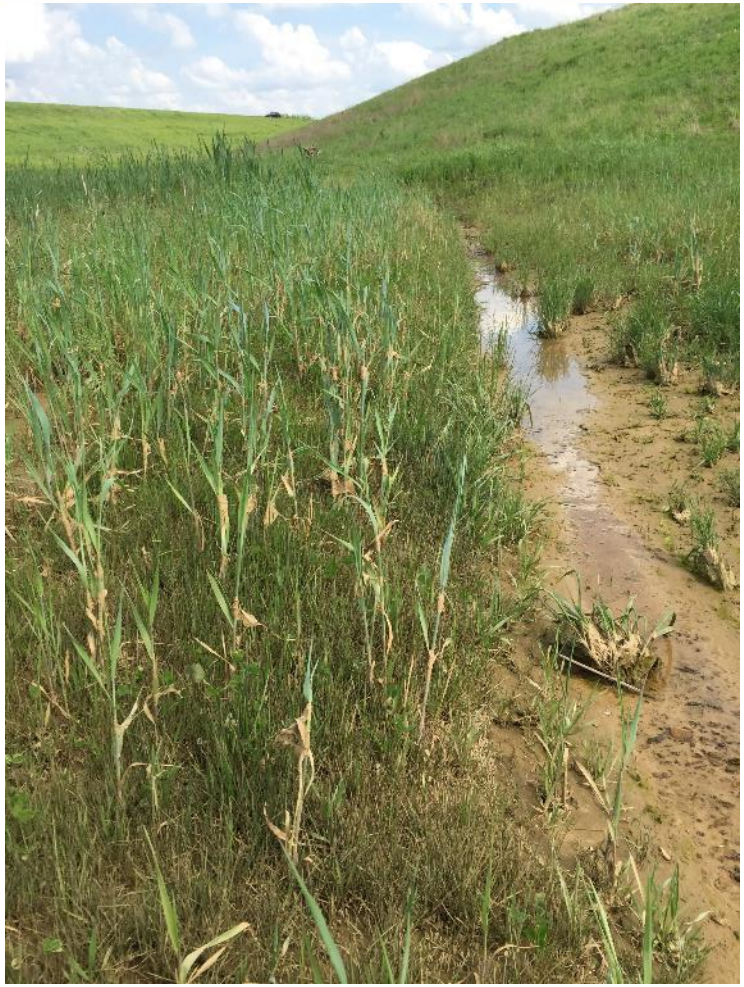
Peabody Coal Streambank Stabilization Project

April 30, note the distinct lines formed by the edges of the ShearForce10 mats along the shoreline...

Peabody Coal Streambank Stabilization Project

…Where ShearForce10 ends, so does the vegetation.

Peabody Coal Streambank Stabilization Project



InstaTurf ShearForce10 successfully stabilized the banks of the stream through the fall, winter and spring months, with vegetation now permanently reinforced against future flood events.