

## Case Study

# Coal Basin Reclamation Northwest of Redstone, CO

## Issues

- Myriad of environmental issues due to mining operations since the 1800's.
- Previous vegetation attempts unsuccessful.
- Poor soils w/ less than 2% organic matter.



Pre-reclamation Site Conditions, 2013.

## Problem

The Coal Basin project area is located in the White River National Forest, northwest of Redstone, Colorado. A combination of surface mined areas, haul roads, and refuse piles has augmented sedimentation into the Dutch Creek and receiving watercourses such as Coal Creek and Crystal Creek. The owner of this property had intentions to conduct Land Development activities and therefore needed to restore and vegetate the site. Several attempts had been made in the previous decades to revegetate the impacted area, but all had failed. The property owner contacted Triton Environmental out of Commerce City, Colorado to assist with obtaining long-term, sustainable vegetative growth.

## Solution

Due to the low fertility of the soils shown on the soil test, Triton Environmental decided to recommend Biotic Earth, a Biotic Soil Amendment applied at 3,500 lbs. per acre. The use of such a product would focus on jump-starting the soil's nature topsoil forming processes and compensating for the very low organic content, as well as being a substantial cost savings over hauling and installing compost. In conjunction with soil improvement, Triton Environmental customized the seed mix of Blue wild rye, Mountain brome, and slender wheat grass and suggested specific grading to create ideal microclimates for the seed. Aspen Earthmoving prepared the soils and Seeding the Rockies installed the Biotic Earth and seed mixtures.

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Initial growth was promising, even under harsh drought conditions. 2014.

## Results

The combination of the Biotic Soil Amendment and Richlawn organic fertilizer provided the much needed organic matter and nutrients that had previously been deprived in the project soils. Based on the success of phase one of this project, the owner decided to continue with the same approach on phase two and three. At the end of 2015, the stormwater permit was closed due to the successful stand of vegetation.

The Biotic Soil Amendment approach offers a cost effective option with proven results on projects that may have been too difficult to revegetate, or too cost prohibitive in the past. The success at Coal Basin, even after so many previous failed attempts stands as a possible template to use on other high altitude reclamation projects for sites with poor soils and short growing seasons.



Successful vegetation achieved for multiple years after installation. 2015.