



Introduction



The Pikeview Quarry (see Figure 1), located on the eastern edge of the North American Rocky Mountains near Colorado Springs, CO, began operations in 1903. During the next 115 years, it supplied approximately half of the limestone used to build the city plus the limestone for the concrete used to construct the nearby United States Air Force Academy campus (source: www.pikeview.org).

Mining operations at the Quarry ceased in 2018. Since then, stabilizing and revegetating the landscape has become the property owner's top priority.



Figure 1: View of the Pikeview Quarry site (center of photo) with Pikes Peak (of the Front Range of the Rocky Mountains) and homes in the city of Colorado Springs for scale.

Project Scope



To restore the roughly 150-acre quarry area and prevent future slope failures, 2H:1V slopes that often reach lengths of 300' needed to be graded and reshaped. After reshaping, the slopes needed a proven erosion control Best Management Practice (BMP) that would protect them for up to 24 months and encourage vegetation growth.

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The Plan



A combination of drill seeding, biotic soil media, and fertilizer was chosen to revitalize the Quarry's soils and aid forthcoming vegetative growth on the slopes. Next, over 422,000 yd² of both 8' and 16' Curlex® II FibreNet™ erosion control blankets (ECBs), manufactured by American Excelsior Company®, were used to provide a 100% natural and wildlife/environmentally friendly cover against erosion (see Figure 2). Backed by decades of proven performance, the Curlex® ECBs helped foster superior germination and vegetative establishment conditions for this vulnerable seedbed.

Curlex ECBs provide these benefits largely due to the natural mechanical functions of their fibers (see Figure 3). These Great Lakes aspen fibers are engineered to be curled and barbed, forming a “Velcro-like” connection that conforms to irregularities in the soil once installed. The curls and barbs also give the fibers a high Manning's *n* (hydraulic roughness) value relative to other ECB fibers, which decreases the amount of energy that sheet flow transfers to the soil and seedbed during precipitation events. A higher Manning's *n* helps slow water flow, increase water infiltration, and keep the underlying seed and soil in place.

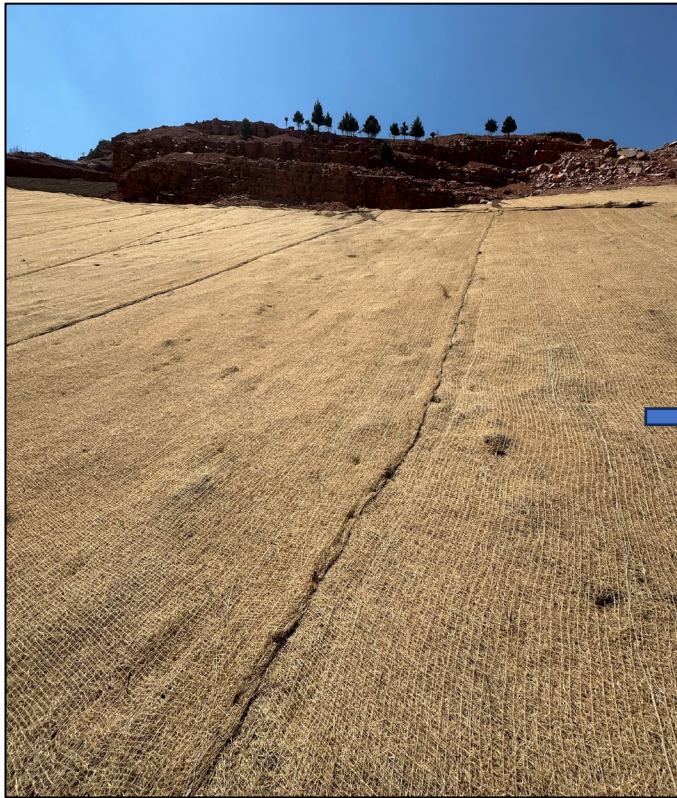


Figure 2: Curlex II FibreNet installed on a mountain slope with openings for tree plugs cut into the blanket.



Figure 3: Close-up image of Curlex II FibreNet.

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Executing the Plan



Proper installation of specified BMPs is key to the success of any project. The following images highlight some of the key installation processes specific to this project (see Figures 4, 5, and 6).



Figure 4: Heavy-duty vehicles and equipment transporting soil and other materials at the Quarry site.



Figure 5: Aerial view of Curlex II FibreNet installation on one of the mountain slopes.



Figure 6: Landscape view of a section of the project with active grading occurring in the foreground and Curlex II FibreNet ECB installation in the background.

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Results



By late July, all of the Curlex II FibreNet ECBs had been installed (see Figure 7). Vegetation had begun to emerge underneath the installations completed in late Spring (see Figure 8), and local wildlife was spotted traversing the site (see Figure 9).



Figure 7: Landscape view of the Quarry site once all ECB installation had been completed.



Figure 8: Emerging vegetation on one of the mountain slopes. The person on the left is shown for scale.



Figure 9: Pronghorns traversing the newly vegetated slopes at the Quarry site.

Next Steps



Project engineers will continue to monitor the slopes via laser surveying monitors. For additional background and up-to-date information about the project, visit www.pikeview.org.

A special thank you goes out to Bowman Construction Supply (Denver, CO), Hydro Turf (Colorado Springs, CO), and the on-site engineers and laborers for making the installation a success. Contact American Excelsior Company regarding questions about this article or for more information at: ccs@americanexcelsior.com.

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