



PAM-12® *Plus* as a Mulch Alternative for Skid Road Reclamation



The West Virginia forestry community has long known that controlling non-point source pollution from silvicultural activities is important. Timber harvesting contractors have the responsibility to implement Best Management Practices (BMPs) in order to minimize the impacts of roads on water resources. The most common BMPs used to limit sedimentation is the use of seed and mulch materials to cover disturbed soil locations and establish vegetative cover as quickly as possible. The specific objectives of this study were to 1.) Establish soil erosion plots and characterize the load from several treatment methods, including hydromulcher and hand applied PAM-12® *Plus* and 2.) Estimate the time required for each treatment method.



Several sites were identified in the Upper Elk River watershed in West Virginia in areas where harvesting operations had been recently completed, but the skid roads had not been previously reclaimed or treated. Individual plots, with slopes ranging from 14-19%, were then identified and equipped with a barrier that limited the transmission of any sediments and water from one plot to another. A tipping bucket rain gauge (see figure on right) was also installed on the site in order to collect precipitation and determine the quantity. Soil sediment from each plot and rainfall data were collected approximately every two weeks for three months during the summer of 2008. Dry sediment weights, skid road characteristics, and rainfall rates were then statistically analyzed to determine the differences in sediment erosion from the skid road sections, while also adjusting for the slope and length differences for each of the different plots. The results were then analyzed using a statistical software package.

Based on the analysis, no statistically significant difference in sediment collected was found from skid roads that were treated with hand applied straw and seed, hand applied PAM-12® *Plus* and seed, or the hydromulcher applied PAM-12® *Plus*. However, the sediments collected on skid roads that were treated with traditional straw and seed or either of the PAM-12® *Plus* treatments were significantly lower than those that were treated with a more traditional hydromulched paper and seed product (contractor's mix). Other variables such as the rain volume, rain intensity, slope, slope length, and date were not found to be statistically significant to sediment rates.

Several factors must be considered for cost, including the cost of the products, the cost of application, and the ease of application. The PAM-12® *Plus* application of choice for this study was found to be

dry application, because of the improved protection against erosion and the lower cost in application compared to other alternatives. While logging contractors have typically used straw mulch that can be time consuming to apply, new mulch alternative such as PAM-12[®] *Plus* are available and can be both effective and economically appropriate.

Facility:	Upper Elk Watershed • West Virginia
Project Description:	This project evaluated the performance of several different treatments, including PAM-12 [®] <i>Plus</i> , on skid road sites to determine the sediment load and time required for each treatment.
Site Profile:	Eight skid road sections with slopes ranging from 14% to 19%
Equipment Utilized:	Hydromulcher and broadcast spreader
Products:	PAM-12 [®] <i>Plus</i>
Application Rate:	1500-2200 lb/acre, depending on the slope
Project Results:	While logging contractors have typically used straw mulch that can be difficult and time-consuming to apply, new mulch alternative such as PAM-12 [®] <i>Plus</i> are available and can be both effective and economically appropriate.

