

The Stoertz Water Quality Evaluation Method for Evaluating Acid Load Reduction

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The Stoertz Water Quality Evaluation Method may be used to calculate the acidity load at mean annual discharge for a particular site. This mean annual discharge, in theory, incorporates the range of acid loadings likely to be seen over a year. In order to evaluate the acid load reduction due to an intervention, like a treatment or reclamation project, in coal mined watersheds, the pre-treatment acidity loadings and discharge divided by mean annual discharge are log transformed. These values may be plotted and fitted with a linear regression line. The acidity loading at mean annual discharge, or 'mean annual load', found from the y-intercept of the linear regression, may be compared between pre-treatment and post-treatment values. The difference approximates the mean annual load reduction due to a particular project. This method has been successfully applied throughout coal mined watersheds in Ohio. These results and applications will be presented alongside limitations and other uses of the Stoertz Water Quality Evaluation Method.