

Treatment of Acid Mine Drainage

Our Penn State team would like to devise a novel technology that will allow acid mine drainage water to be treated and used as a Frack-water source. This involves removing sulfate from acid mine drainage water via our recent innovations. In a number of Pennsylvania regions, the locations of active Marcellus shale natural gas extraction overlaps the regions of acid mine drainage that is residual from earlier coal mining during the past 30-200 years. During summer months, especially, energy development companies may find conventional water sources scarce and/or expensive. The goal of our interest is to devise a treatment technology that will avail energy companies to utilize acid mine drainage water, which is otherwise not a viable water source because of its high sulfate. We are building this current research on the eight years of R&D that we have conducted on removing the oxyanion perchlorate (ClO_4^-) from groundwater. Sulfate (SO_4^{2-}) is another oxyanion..

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