Concrete + Acid Mine Drainage = A Sustainable Solution

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The purpose of this project was to analyse what effect certain types of rock have on the pH of water that runs over them. The following were tested: Slightly acidic water was run over different types of rock and pH readings were taken. Concrete, clay bricks and dolomite were tested under similar conditions. Concrete was also tested under a lower pH with more water. Activated carbon was added to assess if the sulphate levels found in water dropped. Results showed that the dolomite raised the pH but the other two unknown types of rock lowered the pH of water. Concrete and clay bricks raised the pH but the concrete was the most effective. The concrete tested at a low pH was able to raise the pH of water. When activated carbon was added, the sulphate levels dropped slightly. In conclusion, it was found that running water over concrete was the most effective way to raise the pH of water to a level where the water was usable for the irrigation of crops and plants. This method could be scaled up to assist areas affected by Acid Mine Drainage. By combining one waste product (concrete) and another waste product (acid mine drainage) water could be adjusted to get water at a safe pH for watering crops and plants.

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