

The Use of Zeolite and Limestone Mixture to Lower the pH of Acid Mine Drainage at PT. Huadi Nickel Alloy Indonesia, Bantaeng

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Abstract. One of the negative consequences of mining activities is the formation of Acid Mine Drainage (AMD), which is water that contains high acidity and is the result of the mining process that also contains significant levels of dissolved metals. Various studies are being conducted to find ways to reduce or overcome the problem of low pH that arises from mining activities. To reduce the harmful effects of waste, new acid mine drainage management methods should be developed. This study examines the use of a combination of zeolite and limestone to reduce the pH (acidity level) of acid mine drainage through a batch method with a stirring time of 15 minutes. The study was conducted at the Chemistry Laboratory of the Bontang Industrial Technology College, using 120 mesh limestone and zeolite, while testing was carried out with a pH meter. In data analysis, the percentage increase method was used. The findings of this study indicate that the addition of a mixture of zeolite and limestone can increase the pH of artificial acid mine drainage with the most optimal ratio of 30:70, which causes the pH to increase from 2.6 to 8.29, or by 68%. From the results of this study, it can be concluded that the combination of zeolite and limestone can be used as an alternative for acid mine wastewater treatment.

Keywords: Acid Mine Drainage (AMD), Zeolite, Limestone, Process Batch, PT. Huadi Nickel Alloy Indonesia