

The research conducted on developing a method of mine water treatment using lime have been summarized by many authors. The review by Glover, 1967 (31) is the basis for the following discussion.

Crichton, 1928 (32) discussed the application of the hydrated lime process to acid mine drainages and reported that estimates of the costs of treatment ranged from 15 to 25 cents/1,000 U.S. gal. Kaplan, 1936 (33) reported attempts to prepare marketable by-products such as rouge from acid mine drainage but no reports of the full-scale application of these proposals have been seen. During the period from 1930 to 1946, reports on the treatment of acid mine drainage by lime were singularly absent from the technical literature.

The treatment of acid mine drainage by lime to produce water for coal preparation plants (breakers) was reported by Bilharz, 1949 (34); he described the use of lime for the treatment of an acid mine drainage from metalliferous mines the Tri-state Field. These drainages contained 6,000 mg/l of iron and 2,000 mg/l of zinc in solution. During subsequent years, many publications appeared on the handling, selection and application of lime to acid wastes, particularly to steel pickle effluents, but these reports did not add to the fund of knowledge concerning the treatment of acid mine drainage.

Braley, 1951 (35) reported the results of pilot plant studies of acid mine drainage neutralization processes and found that although lime gave a rapid and complete reaction, the sludge settled very slowly. It was concluded that treatment with lime or any other alkali would not be practicable because of the "economic and other difficulties involved," but cost estimates were not provided to support this conclusion.

The treatment of acid mine drainages in the Witwatersrand, South Africa, was described by F. C. Johnson, 1952.(36) These drainages contained sulphuric acid,