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CHAPTER 6

Conclusions

A standard procedure for the evaluation of carbon sources in acid mine drainage was developed. The results obtained during these studies confirmed work done by other researchers. Therefore we concluded that the intravenous feeding apparatus could be used as an anaerobic bioreactor for various laboratory experiments.

Sulphate reduction using different defined carbon sources in acid mine drainage will form the basis for the evaluation studies with undefined carbon sources. It was concluded when acetate is not as efficient as the other carbon sources for the reduction of sulphate. Propionate, butyrate, and lactate proved to be efficient carbon sources for the reduction of sulphate. Ethanol, pyruvate and methanol were also not efficient as carbon sources for the reduction of sulphate. These findings are in agreement with work done by other researchers.

The conceptual model for the passive treatment of acid mine drainage accounts for major events of interest occurring within the passive acid mine treatment system. This model will assist in identifying the parameters that significantly influence the system response. Possible causes for system malfunction or failure were also identified.