

OXIC LIMESTONE DRAINS FOR METAL MINE DRAINAGES¹

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Abstract: Separation of neutralization function and toxic metal removal can significantly reduce overall size of passive treatment systems. Many acid metal mine drainages are oxic and neutralization strategies must work with this fact. The use of oxic limestone drains for acidic water has challenges. Some designs have failed to meet design goals due to armouring, loss of hydraulic retention time, short-circuiting from solids dissolution and solids buildup. However, appropriate design, operation and maintenance features can overcome challenges. This paper will present an examination of how to improve design guidelines to minimize armouring, loss of hydraulic retention time, short-circuiting from solids dissolution and solids buildup. In addition, results of the successful neutralization and metals removal using bench-scale oxic dolomitic limestone will be presented.

Additional Key Words: design guidelines, passive treatment systems

¹ Paper was presented at the 2005 National Meeting of the American Society of Mining and Reclamation, June 19-23, 2005. Published by ASMR, 3134 Montavesta Rd., Lexington, KY, 40502

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