REMOVAL OF MANGANESE AND ZINC FROM MINING INFLUENCED WATERS[1]

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Abstract: The water from the Palmerton Zinc Superfund Site averages 57 ppm manganese and 328 ppm zinc. Treatment objectives were to reduce the total concentration to below 1 ppm manganese and 1 ppm zinc using a calcium co-precipitation process. A bench-scale pulsed limestone bed reactor was used to inundate the mine water with calcium carbonate. Various metals removal methods were tested in an attempt to precipitate the metals from the effluent of the pulsed limestone bed reactor. These methods included air stripping, using a limestone bed, and using a limestone channel. The most promising method for removing the metals from the water was the limestone channel, which reduced the concentrations to 33 ppm manganese and 7 ppm zinc.

Additional Key Words: Manganese, zinc, pulsed limestone bed reactor, limestone channel

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