

**Constructed Wetland Treatment System for Upper Blackfoot Mining Complex.** F. S. Sanders

Abstract: A combined passive oxidation/sedimentation (pre-treatment) and constructed wetland (polishing) system has been designed and installed to treat mine drainage at the inactive Upper Blackfoot River Mining Complex northeast of Lincoln, MT. The system is designed to treat up to 100 gpm flow with moderate heavy metal concentrations (25 to 95 mg/L Zn; lower concentrations of Pb, Cu, and As), moderate Fe concentrations (< 100 mg/L), and periodic high acidity (pH 2.6 to 3.5). The treatment scheme is flexible to accommodate a wide range of flows, metal concentrations, and acidity in order to gain cost-efficiencies and to meet restrictive discharge standards for the environmentally-sensitive Blackfoot River watershed. The wetland treatment system presently is undergoing start-up testing and initial tuning and will be operational during summer, 1996. Conceptual and engineering designs are presented along with preliminary data.

Additional Key Words: constructed wetland, acid mine drainage, metals