

Abatement of AMD at Abandoned Coal Mines in North Central Missouri: An Overview¹

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Abstract: Missouri Department of Natural Resources, Land Reclamation Program has conducted three large acid-mine drainage (AMD) abatement efforts in north central Missouri, the Upper Cedar, Old Bevier, and Huntsville Projects. This paper will overview the case history and performance of two of these abatement efforts and preview possible future remediation activities in the region. Both sites lie in the inactive Bevier Coal Field, which historically was one of the largest coal producing regions in the state. The Old Bevier Passive Treatment System is located within the former BeeVeer Mine, a large, historic, area-type surface operation in Macon County. The initial passive treatment facility and associated land reclamation was completed in 1990 (Bevier I) to abate a series AMD discharges captured by a series of French-drains. This facility was subsequently reconstructed with Office of Surface Mining and Reclamation (OSMRE) assistance in 2001 (Bevier II) to ensure protection of the East Fork Chariton River. Efforts are underway for a major maintenance effort for the Bevier II facility in 2019. Passive treatment includes a large highwall drain that acts as an anoxic limestone drain and two, sequential vertical flow ponds. Significant AMD problems also occur to the south in Randolph County in and around the small city of Huntsville, Missouri. These were initially abated with land reclamation and mine seal emplacement between 1984 between 1990, culminating with the elimination of the Huntsville Gob Pile. However, four large AMD discharges remain, which were evaluated between 2003 and 2004 by the U.S. Geological Survey and OSMRE. A reassessment considering new passive technologies are warranted for the Huntsville area discharges. Several feasible options are presented at this time.³

Additional Key Words: anoxic limestone drain (ALD), vertical flow pond, and organics, limestone and aglime (OLA) cells, sulfate-reducing bioreactor.

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 3. Work reported here was conducted near 39° 25' 05" N; 92° 26' 22" W.