TREATMENT PLANT OPTIMIZATION AND COST REDUCTION STRATEGIES AT SELECTED BANKRUPTCY MINE SITES IN PENNSYLVANIA

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Ensuring perpetual treatment of coal mine drainage (CMD), post-bankruptcy, is a challenging task. The Pennsylvania Department of Environmental Protection (PA DEP) inherited treatment responsibilities after the bankruptcy of Barnes and Tucker Coal Company, LTV Steel Corporation (LTV) and Mon-View Mining Company. During bankruptcy proceedings, PA DEP used historical treatment cost data to calculate the perpetual treatment liability for each site. In all three cases, the allotted assets were less than the amount requested by PA DEP resulting in partial funding of the perpetual liability. Liquid assets were placed in growth income trusts, whose revenue is utilized to pay for the ongoing operation and maintenance of mine drainage treatment facilities. Cost reduction and performance evaluation of these facilities is essential in maintaining operations.

Over the past five years, a PA DEP, Bureau of Abandoned Mine Reclamation (BAMR) and a United States Department of Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE) team have performed treatment cost-reduction and optimization evaluations at these facilities. In all cases existing treatment strategies, while still effective in achieving effluent goals, were able to be replaced by more cost effective methods that preserved or improved system performance. Amelioration of mine pool water quality through time was a key element in enabling these modifications. To date, the efforts have resulted in savings to the Commonwealth in excess of $950,000 annually in system operations as well as significantly reducing anticipated recapitalization costs.

This presentation provides the results of the cost-reduction evaluations. First, the history and treatment configurations of the sites are presented. Second, the methodology used to perform the cost-reduction evaluation is presented and lastly, the results of cost-reduction evaluation are presented. The presentation also shares some unique challenges, practical applications and lessons learned by the team to date through project implementation.