

Silver Creek Mine Tunnel Acid Mine Drainage Restoration
319 NPS Program Project # 2728
Sponsor: Schuylkill Headwaters Association, Inc.

PROJECT DESCRIPTION The Silver Creek Mine Shaft contributes abandoned mine drainage with high concentrations of iron, aluminum and manganese to Silver Creek, a tributary to the upper Schuylkill River in Schuylkill County leading to metals impairment of the Schuylkill River. This project was for the design, installation and evaluation of a passive treatment system to treat the Silver Creek discharge. The system consists of a scour pool, aeration pond, settling pond, wetland cell and a variable level pond for oxidation and settling of metals. Project timeframe: 6/1/08-9/30/10.

PROJECT GOALS reducing iron, aluminum and manganese concentrations in the discharge, increasing the alkalinity of the discharge, reducing the metal loading entering Silver Creek and the Schuylkill River

PROJECT RESULTS The passive treatment system consists of five separate cells. The flow first enters a scour pool which acts as a leveling area for the water. The discharge then flows through an aeration pond, settling pond, wetland cell and then a final pond. The project is effectively removing 171lbs/day iron, 14.6lbs/day aluminum, 5.1lbs/day manganese.

WATER QUALITY	PRETREATMENT DISCHARGE	POST TREATMENT DISCHARGE
pH	6.4	7.6
aluminum	0.782mg/l	<0.2mg/l
iron	21.7mg/l	0.4mg/l
manganese	2.9mg/l	1.2mg/l

Before Treatment (AMD discharge)



After Treatment (treatment ponds)



PROJECT COSTS \$853,402 319 Nonpoint Source Grant.

LESSONS LEARNED The value of the level spreaders was most important in a totally passive system.

PARTNERS Schuylkill Headwaters Association, Inc.; Schuylkill County Conservation District; Schuylkill Action Network; Northampton Fuels; Premium Fine Coal; Reading Anthracite Coal and Rettew Associates. Flyway Excavating was the contractor.

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