

**F**ounded in 1971, the Loyalhanna Watershed Association (LWA) strives to achieve its mission to protect, conserve, and restore the natural resources of the Loyalhanna Creek Watershed. Comprised of over 2,500 miles of waterways drainage 300 square-miles of land, the watershed flows from its headwaters on Laurel Mountain, to Saltsburg, Westmoreland County.

Specifically, LWA is extremely active in addressing environmental issues through developing restoration plans for impacted waterways, protecting key land parcels near the headwaters and upper watershed boundaries, offering educational opportunities for area residents, maintaining recycling programs and clean-up efforts in the community, and implementing projects to restore streams damaged by erosion and abandoned mine drainage (AMD) pollution.



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**LOYALHANNA  
WATERSHED  
ASSOCIATION**



*Upper Latrobe  
Abandoned Mine  
Drainage  
Treatment Project*



**Funding Support Provided By:**

Department of Environmental Protection  
Growing Greener I & II

United States Department of the Interior  
Office of Surface Mining

Latrobe Foundation

# Project Background



The goal of the Upper Latrobe Abandoned Mine Drainage (AMD) Treatment Project is three phase - 1) assess and explore three

AMD discharges polluting the Loyalhanna Creek in the heart of the city of Latrobe, PA; 2) construct a full-scale passive treatment system capable of treating 500 gallons per minute (GPM) of AMD; and 3) seal the three discharges.

The project began in 2004 with a study by L. Robert Kimball Associates who examined the hydrology, hydrogeology, connectivity, chemistry and flow of the three separate discharges. It was determined at that time that they were all discharging from the same mine pool below Latrobe, part of the Pittsburgh coal seam mined in the early 1900s.

As a result of this connectivity, LWA worked with the PA Department of Environmental Protection (DEP) on a plan to drill a borehole into the existing mine pool, on a site central to the discharges that was large enough to construct a suitable treatment system. A 30-acre parcel of land owned by the Latrobe Foundation was chosen for the site, and ownership of the property was transferred to LWA by the Foundation.

A borehole was drilled, and mine water was encountered at 140 feet.

A temporary treatment pond was also constructed at that time, and was fitted with floating baffle curtains to aid in water retention to treat around 100 gpm of AMD while exploration could continue on the existing discharges.



## Treatment System

Phase II of the project began in 2007 when a \$500,000 Growing Greener II grant was submitted and awarded to LWA for the construction of a passive treatment system capable of treating the full flow from the mine borehole (about 500 gpm.)



The mine water is net alkaline and contaminated with an average of 45-50 mg/L of Iron. The treatment system functions by naturally aerating and retaining the mine water so that dissolved iron will oxidize to form an iron solid and settle out in three ponds and a large constructed wetland. After about 24 hours, the water leaving the wetland contains less than 1 mg/L of Iron.

The system's installation includes the following main components:

- An access road connecting the project area to Center Drive, the nearest township maintained road.
- Site clearing and removal of ~ 12,000 CY of excess soil off site
- Construction and lining of three settling ponds and a trough transfer system
- Construction and lining of a large constructed wetland, and planting of more than 14,000 native wetland plants
- Construction of a sludge drying basin

The project was designed and managed by Robert Hedin, of Hedin Environmental and Iron Oxide Recovery, Inc. of Pittsburgh, PA, and was completed in June, 2010. The final phase of the project to seal the existing discharges is in process.

This project has numerous successes, mainly due to the cooperation and enthusiasm of those involved with the Loyalhanna Watershed Coalition (LWC), comprised of individuals representing Saint Vincent College, Western PA Conservancy, Westmoreland Conservation District, Western PA Coalition for Abandoned Mine Reclamation, DEP, and DEP BAMR.

