

**Erico Bridge Passive Treatment System**  
**SRI O&M TAG Project # 25 Request #1**  
**OSM PTS ID: PA-187**

Requesting Organization: Slippery Rock Watershed Coalition (in-kind partner)  
Receiving Stream: Seaton Creek (Slippery Rock Creek Watershed)  
Hydrologic Order: Seaton Creek→Slippery Rock Creek→Beaver River→Ohio River  
Municipality/County: Venango Township, Butler County  
Latitude/Longitude: 41°07'31.0008"N / 79°51'38.0016" W  
Construction Year: 2003

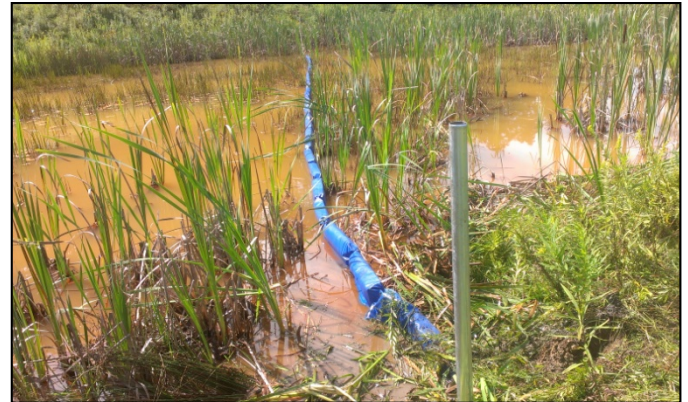
The Erico Bridge Passive Treatment System was constructed in 2003 to treat a net-acidic, metal-bearing, underground mine discharge in Venango Township, Butler County, PA. The large passive treatment system consists of 3 Anoxic Limestone Drains (ALDs), 5 settling ponds, 2 wetlands, and a Horizontal Flow Limestone Bed (HFLB).

The Slippery Rock Watershed Coalition (SRWC) requested assistance on 11/1/2012 to address maintenance issues regarding the system. During recent onsite inspections, a substantial portion of the water was observed to be flowing through the HFLB emergency spillway indicating that either the piping or the limestone aggregate had become plugged. Furthermore, as beavers had built a dam across the HFLB emergency spillway, water level in the treatment wetland had been raised which caused the water to flow over the wetland embankment in several locations. SRWC volunteers removed the dam from the spillway.

On 1/16/13, Ryan Mahony and Bryan Page of BMI traveled to the site to back-flush the HFLB. Little improvement, however, was realized from back-flushing, indicating that the problem was substantially related to plugging of the treatment media by iron and manganese precipitates. After back-flushing the HFLB, a brief site inspection was completed. During the inspection, the baffle curtains in Settling Ponds 1 and 3 were observed to be in disrepair or nonfunctional and needed to be replaced. In August 2013, new baffle curtains were installed.

BMI recommended that the limestone aggregate in the HFLB needed to be at least stirred if not washed to remove the precipitates in order to increase permeability and restore treatment performance. As the HFLB was designed to contain 9000 tons of limestone aggregate, the work to rehabilitate the bed was beyond the scope of the O&M TAG grant; therefore, additional funding was needed. In July 2013, the SRWC and SRI submitted an ACT 13 grant application to the Pennsylvania Department of Community and Economic Development (PA DCED) that included funding to rehabilitate the HFLB. SRI was awarded the grant. The new landowner executed the required access forms and work to rehabilitate the HFLB is to be conducted in the summer of 2015.

The project team thanks the SRWC for all of their efforts including support and assistance. Funding for technical assistance and maintenance was provided by the PA DEP's Growing Greener and the Foundation for Pennsylvania Watersheds grant programs and in-kind services by project partners.



At the Erico Bridge PTS, water was discharging over the HFLB emergency spillway (*top left*) indicating either the piping or limestone aggregate was plugged. In addition, beaver had built a dam across the spillway (*top left*) causing the water level within the treatment wetland to rise and, in places, flow over the berm, flooding the access road (*top right*). The HFLB pipe was back-flushed (*center*) using an air compressor (*middle left*). New baffle curtains were also installed (*middle right*) in Settling Pond 1 (*bottom left*) and Settling Pond 3 (*bottom right*).