

Miller Run #1 Passive Treatment System
SRI O&M TAG Project # 30 Request #1
OSM PTS ID: PA-284

Requesting Organization: Huntingdon County Conservation District (in-kind partner)
Receiving Stream: Miller Run (Shoup Run Watershed)
Hydrologic Order: Miller Run→Shoup Run→Juniata River→Susquehanna River
Municipality/County: Carbon Township, Huntingdon County
Latitude/Longitude: 40°13'44.5944"N / 78°10'39.3420" W
Construction Year: 2007

On 7/22/13, Andy Patterson of the Huntingdon County Conservation District (HCCD) contacted Stream Restoration Incorporated (SRI) regarding issues with the Miller Run #1 Passive Treatment System. The system was constructed in 2007 and consists of a 400-ton limestone bed. On 8/19/2013, Cliff Denholm met onsite with Andy Patterson. During the site visit, Andy reported that the system had always leaked and that at one point they removed the stone and lined portions of the bottom of the bed with clay, which was not overly successful. Despite the leak, the system still worked fairly well, but recently effluent water quality had declined.

During the site visit, samples of the raw water and two seeps located below the limestone bed along the stream were collected and a dye test was conducted in order to determine if the source water for the seeps was from the leaking pond. The quality of the raw water and seeps were found to be similar, indicating a leak. Approximately 1 hour after adding dye to the influent of the limestone pond, dye was observed at Seep 1 and thirty minutes subsequent, at Seep 2 confirming that the bed was leaking. With such a short retention time, substantial water quality improvements to the discharge would not be expected.

BioMost, Inc (BMI) prepared a plan to repair the treatment system (See attached plan.), which included removing and stockpiling the limestone aggregate, installing a geosynthetic clay liner (GCL) along the bottom and sides of the pond and inlet channel and then carefully replacing the stone. It was also recommended that the limestone be cleaned if possible. The cost was estimated to be about \$19,400. The cost was beyond the scope of the O&M TAG program and other funding sources would need to be sought. The HCCD was able to obtain a \$25,000 grant from the EPA 319 program and completed the repair. According to the HCCD, the repair was successful as the bed no longer leaks and the pH of the final effluent during the monitoring snapshot was greater than 7.

The project team thanks the Huntingdon County Conservation District and the Shoup Run Watershed Association for their volunteer time and support in providing information and maintaining the Miller Run #1 Passive Treatment System. 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.



The Miller Run #1 Limestone Bed (*top left*) was experiencing leakage of poor water quality and was not discharging from the effluent pipe (*top right*). A dye test was conducted by placing dye at the inlet of the bed (*bottom left*) to aid in determining if the seeps along the stream bank were indeed AMD from the leaking limestone bed. The dye began to appear at Seep 1 (*bottom right*) after 1 hour and at Seep 2 at 1.5 hours indicating that the pond was not only leaking, but also severely short-circuiting.