

## **NARRATIVE REPORT**

The purpose of this project was to construct a passive treatment system at the MR ROSS abandoned mine drainage discharge in the Morgan Run watershed. The MR ROSS discharge, which emanated from a backfilled strip mine area, created a large channel that formed a tributary to Morgan Run. Prior to construction, the MR ROSS discharge contributed 140 lbs/day of acidity, 4 lbs/day of iron, and 2 lbs/day of aluminum to Morgan Run.

Work on the MR ROSS System was true to our original plan and entailed the construction of the system, construction oversight, development of an O&M plan, and as built drawings. The design and permitting phase was completed through a previous grant award. Work was completed under the Pennsylvania DEP Permit Number E17-007 Waiver 16 and General Permit GP 071711502. Treatment system components selection and sizing was provided by New Miles of Blue Stream, engineering was provided by Alder Run Engineering, and the construction was completed by E.M. Brown Inc.

## **SUCSESSES**

The greatest success achieved through this project was the successful construction of the MR ROSS passive treatment system. As you will see detailed in the Goals and Accomplishments worksheet, the system is doing well at treating the water. Some results include:

Also, we were able to resolve a landowner issue that arose during construction that is explained further in the “Problems” section below.

Lastly, we were able to secure matching funds from OSM, the Foundation for PA Watersheds, and Trout Unlimited to assist with the construction costs which kept us from having to cut out any parts of the project to fit within a smaller budget.

## **PROBLEMS**

Unfortunately, one landowner who had been on board with the project throughout the design and permitting phase would not allow us across their property for construction without paying a hefty sum to use their land. Fortunately though, the Ross’ graciously allowed us on their property for the project and we can’t thank them enough for that.

Additionally, the construction contractor dug into what is believed to have been a wall associated with the mine responsible for the MR ROSS discharge. Once opened up, thousands of gallons of water drained out and the original ROSS discharge stopped flowing, leading us to the conclusion that this was in fact part of the same mine complex. Currently, the water enters the system via drains installed into this new opening rather than the original discharge. Fortunately, flows from this new opening fall within the design specifications for flow rate for the MR ROSS system. We are also fortunate to have had an experienced construction contractor on site as they were able to deal with the flood of additional water without having severe erosion problems and destruction of the progress that had been made on the system at that time.

## HOW WORK CONTRIBUTED TO SOLUTION OF ORIGINAL PROBLEM

Because this system is now completed and is discharging treated water we consider it successful at remediating the original problem: a low pH, metal laden, abandoned mine discharge.

## WHAT REMAINS TO BE DONE

Continued operation, maintenance, and monitoring of this system are all that remain to be completed at this location. Though this project goes a long way to remediating the abandoned mine drainage in the Morgan Run watershed, there remain several discharges in the watershed that must be addressed for the main stem of Morgan Run to once again become a viable fishery. To that end, we have concurrently been constructing a passive treatment system at the MR 7 site upstream of MR ROSS which is very close to completion. We also received additional funding to construct a passive treatment system on the MR 8 discharge upstream of the MR ROSS site. We anticipate starting construction of this system in 2014. In 2013 we submitted a Growing Greener grant for funds to construct a passive treatment system at the LITTLE D/CHEW discharge downstream of the MR ROSS site which we hope to be awarded in 2014. That still leaves work to be done on the MR 1-6 discharges also downstream of MR ROSS. These discharges are very close together and although they are low flow, they have extremely bad water quality.

## DISSEMINATING RESULTS

Copies of the as-built drawings, operation and maintenance plan, and this final report will be distributed to all project partners. Also, shortly after the system first went online in September of 2012, we hosted a tour of the system for the West Branch Susquehanna Restoration Coalition and will consider having an open house in the future; possibly once the MR 7 system is also finished.

## SPENDING AND BUDGET

Our spending aligned almost perfectly with our original Growing Greener budget. At the end, we did have to transfer \$4476.43 from Contractual to Construction to cover the cost of additional tree plantings at the site.

## **GOALS AND ACCOMPLISHMENTS WORKSHEETS**

See attached worksheets.

## **PHOTOGRAPHS**

Can be found on the included CDs.

## **TECHNICAL REPORTS**

Permit approvals, AMD Treat Sheet, Grading and other Plan Details, Bid Documents (Contract Documents), and Addendums can be found on the included CD.

### **POLLUTANT LOAD REDUCTIONS**

Water quality information of discharge before construction and system effluent post construction:

	Before	After
pH	3.5	7.4
Acidity	57.3 mg/L	-75 mg/L
Alkalinity	0 mg/L	103 mg/L
Iron	3.9 mg/L	1.6 mg/L
Aluminum	2.2 mg/L	0.09 mg/L
Manganese	8.3 mg/L	2.19 mg/L

### **OPERATION MAINTENANCE AND REPLACEMENT PLANS**

The Clearfield County Conservation District and Morgan Run Watershed Group will work together to perform the operation, maintenance, and replacement as well as the continued monitoring of the MR ROSS system.

### **FINANCIAL REPORT**

See attached report.

### **PROJECT SUMMARY**

One page project summary handout attached.

### **AMD TREATMENT SYSTEM FORM FOR DATASHED**

The Watershed Specialist with the Conservation District manages the MR ROSS Passive Treatment System form on Datashed and is currently uploading updated information to the form.