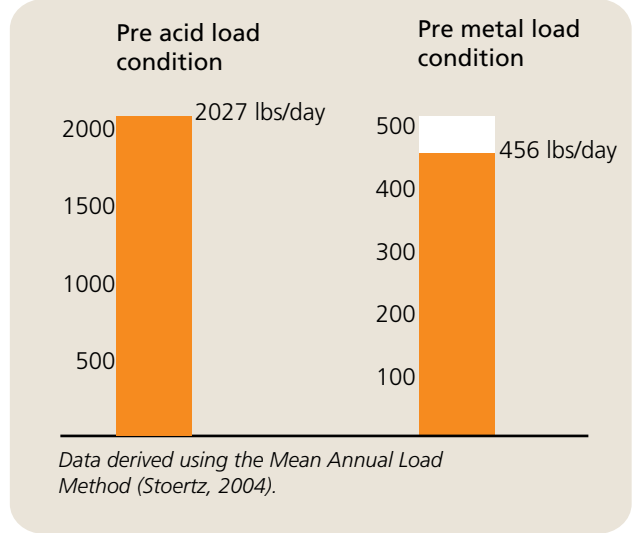


Pre-construction



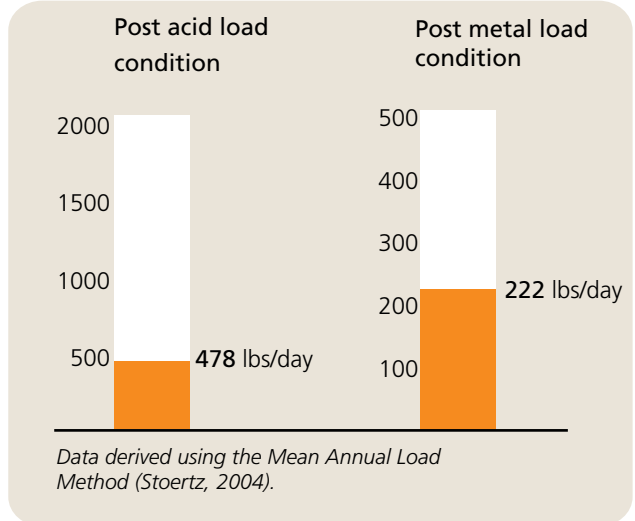
Mine waste in valley  
Photo by Raccoon Creek Partnership



Post-construction



Successive Alkaline Producing System (SAPS)  
Photo by Ben McCament



Buckeye Furnace and Buffer Run Project is located in Section 25 of Milton Township in Jackson County and lies within the 14-digit HUC unit #05090101050030. The site is 65 acres and is located in the Little Raccoon Creek subwatershed. The design was completed by BBC&M Engineering Inc. for \$125,000. The treatment approach for this site was to eliminate strip pits, reclaim the gob pile, and install a Successive Alkaline Producing System (SAPS) a passive treatment system. The major considerations for this project was mostly source control and but also constructing a passive treatment system. The goal of the design was to reduce 75 percent of the acidity

discharging into Little Raccoon Creek. The acidity has been reduced by 46 %. Construction was complete June 20, 1998, by Earth Tech Inc. for a cost of \$1,090,530. The major responsibility of the construction company was to complete all reclamation activities described in the project design. The funding source for the project design was ODNR-DMRM, and for construction the sources were ODNR-DMRM, OEPA and OSM. Figures 3 and 4 (shown on page 3) estimate approximately 1549 lbs/day of acid and 234 lbs/day of metals were reduced from entering into Little Raccoon Creek as a result of this AMD reclamation project.

### Water quality report

Water quality data was collected at the project discharge as well as multiple stations pre- and post-construction. The graphs below show changes in pH (Figure 1) and acidity (Figure 2) along the mainstem of the receiving stream upstream and downstream of the project discharge as a result of the AMD reclamation project.

Figure 1. Pre and Post pH

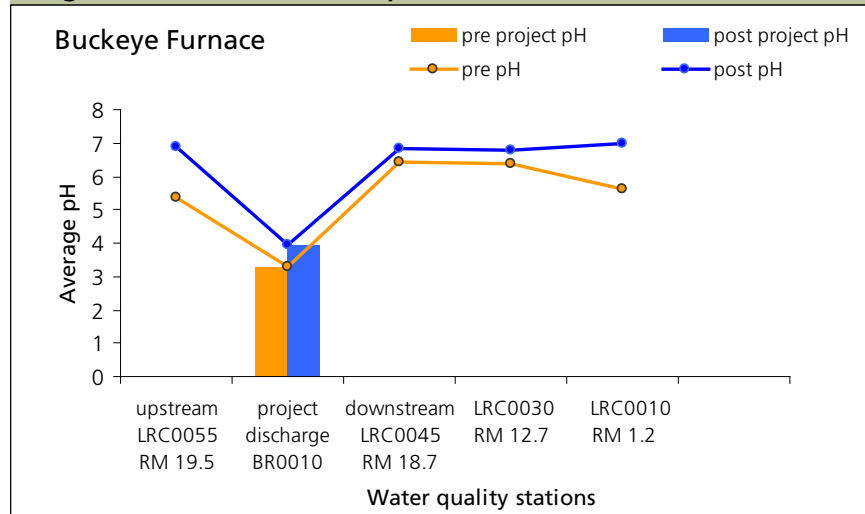
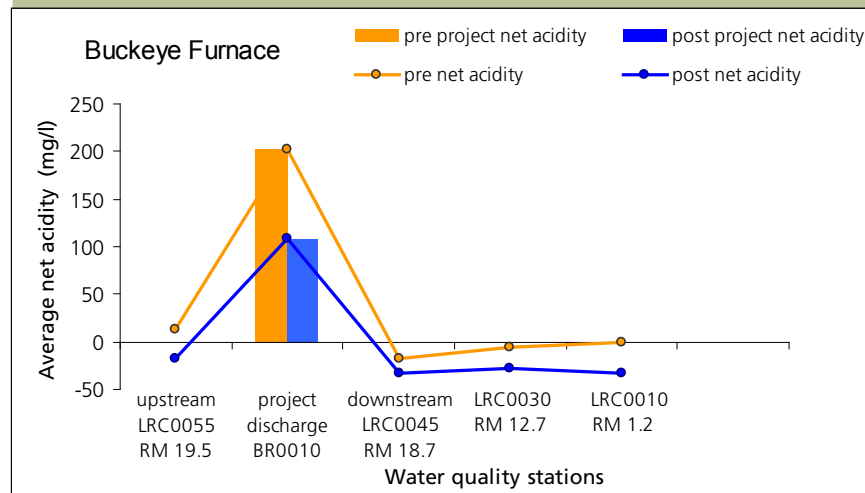


Figure 2. Pre and Post Acidity



As a result of the Buckeye Furnace and Buffer Run project, the pH and net acidity has improved downstream of the reclamation site for 18 miles. Pre-construction data shows pH in the range of 3.3 – 6.4 downstream of the project. However, after installation of the Buckeye Furnace and Buffer Run reclamation project, post-construction data shows pH in the range of 3.9 – 7.0 downstream of the project discharge. The net acidity concentrations decreased, showing net alkaline conditions continuing for 18 miles downstream to the mouth of Little Raccoon Creek station LRC0010.

### Water Quality – load reductions

Using the Mean Annual Load Method (Stoertz, 2004) acid and metal load reduction occurring at this project were plotted and shown in Figure 3 and 4. Acidity, iron, aluminum and discharge were measured pre- and post-construction at the project discharge from 1/1/1996 to 3/25/1998 for pre-construction and from 6/23/1999 to 6/30/2007 for post-construction.

Figure 3. Acid Load Reduction

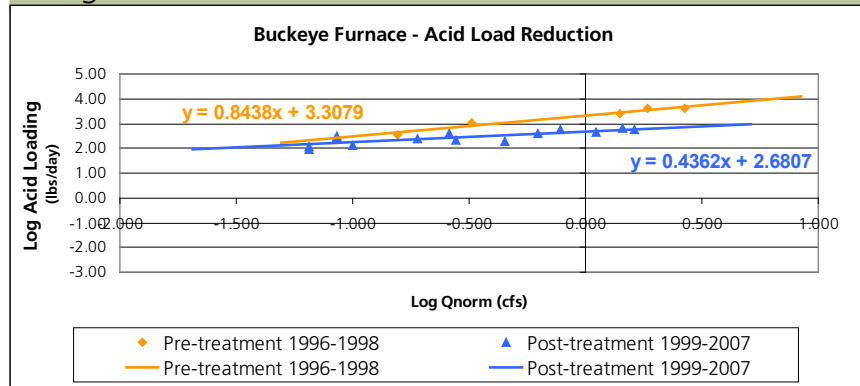
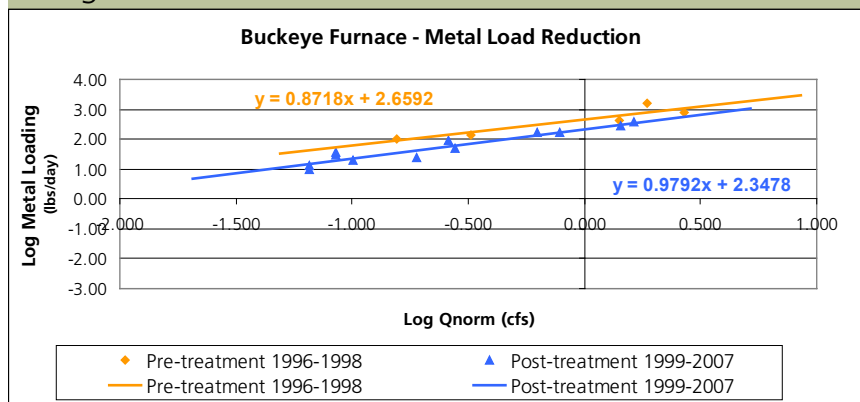


Figure 4. Metal Load Reduction



Stoertz, Mary W. and Douglas H. Green, 2004. Mean Annual Acidity Load: A Performance Measure to Evaluate Acid Mine Drainage Remediation. Ohio Department of Natural Resources Conservation and Restoration Innovations 2004 Applied Research Conference at Ohio University.