

2010 NPS Report - Monday Creek Watershed - Big Four Hollow

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Project Status: Complete: 10/29/2004 ODNR Project Number: HC-Wr-20

Pre-construction



Big Four Hollow, Photo by Monday Creek Restoration Project

Post-construction



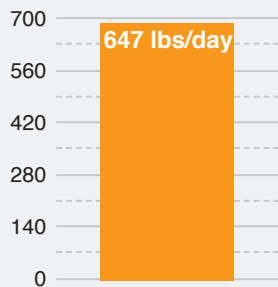
Big Four Hollow, Photo by Monday Creek Restoration Project

Big Four Hollow is located in Section 14 of Ward Township in Hocking County and lies within the 14-digit HUC unit #05030204060030. The project site covers 285 acres of a 410 acre sub-watershed (Big Four Hollow) draining to Monday Creek. Big Four Hollow is underlain by deep mines and has been surface mined around the hills where the coal crop was accessible causing many AMD seeps to discharge in the basin.

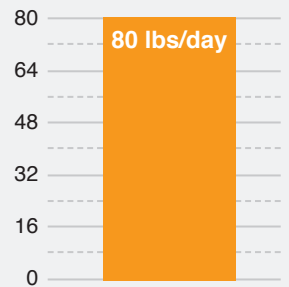
The design was completed by USFS and TN & A for \$19,000. The treatment approach for this site was to install two limestone leach beds (3000 sq. ft) and approximately 1,400 linear feet of limestone channel (OLC). The goal of the project was to decrease acidity concentrations by 82% at station BF00400. However only 37% of the acidity concentration has been decreased at site BF00100. Construction was complete Sept. 17, 2001, by Pangea for a cost of \$320,000. The funding sources for this project were USFS for the design and MCRP, ODNR-DMRM and USFS for construction. On average, approximately 240 lbs/day of acid and 15 lbs/day of metals were prevented from entering into Monday Creek as a result of this AMD reclamation project. This project was designed to reduce acidity, not metals, but the natural wetland at the mouth of Big Four Hollow retains some metals.

Site: BF00100

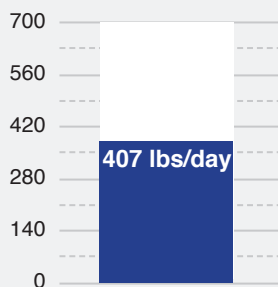
Pre treatment acid load



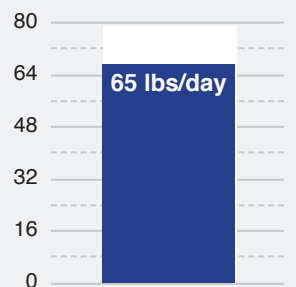
Pre treatment metal load



Post treatment acid load



Post treatment metal load



Data derived using the Mean Annual Load Method (Stoertz, 2004).

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Similar to other environmental best management practices (BMPs), performance of acid mine drainage reclamation projects are also expected to decline with time. Currently, operation and maintenance plans are being designed for each existing system and for future projects. Figure 1 and 2 show the mean annual acid and metal load reduction (Stoertz, 2004) for each year (or group of years) during post-construction from the project effluent. These graphs show the rate of decline (and/or improvement) with time in the performance of the treatment system. Knowing this rate of decline will aid in the implementation of operation and maintenance plans for each site. Yearly load reductions are plotted and shown in Figure 1 and 2.

Figure 1. Yearly Acid Load Reduction

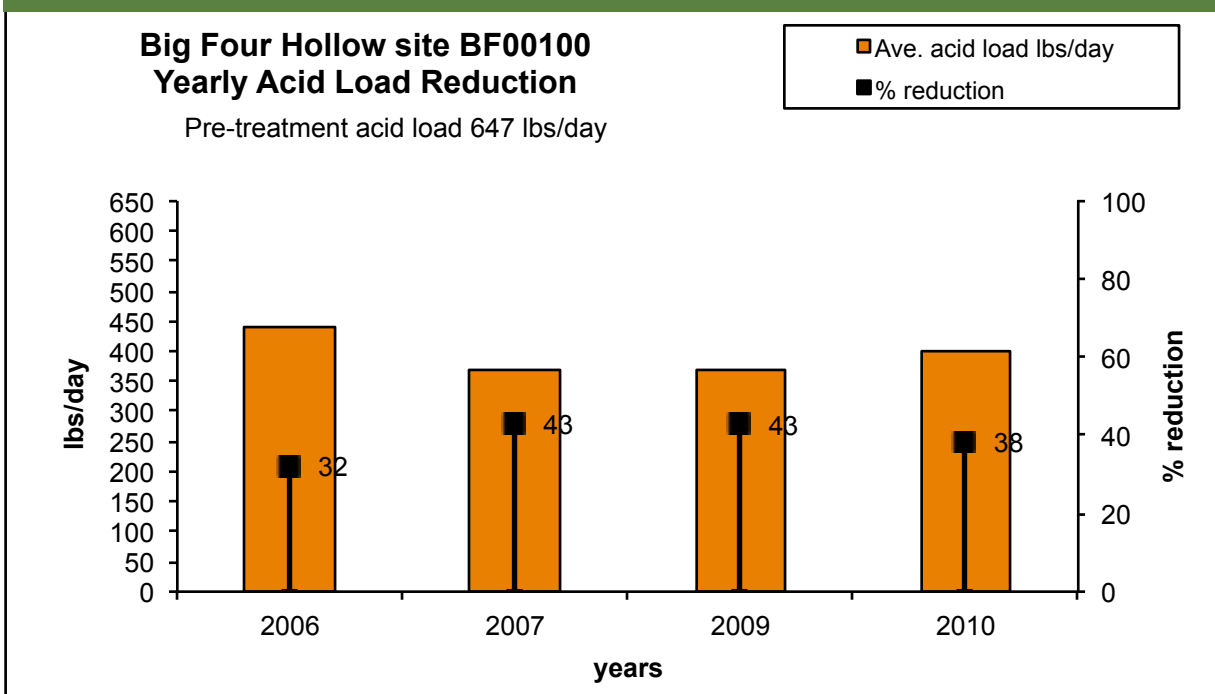


Figure 2. Yearly Metal Load Reduction

