

## One of the Iowa Watershed Cooperative Agreement Program sites

The Roozeboom AML/AMD Site was disturbed by past coal mining practices in the 1960's, and left in an unreclaimed state. The site is located near Oskaloosa in Mahaska County, Iowa and lies adjacent to the Little Muchakinock Creek, which empties directly into Muchakinock Creek.

The site is approximately 20 acres in size, located mostly on a gently sloping hillside, and consists primarily of clogged stream land and a small section of clogged stream. The site contains multiple large gullies that contain acid and toxic materials that prevent vegetation from becoming established.

The site contains 700 feet of dangerous highwall. Four ponds are located on the site. Three of the ponds, two wetland areas and a stream, a total surface area of approximately 9.5 acres, were delineated by the US Army Corps of Engineers as regulated water bodies of the United States. Pond #3 has poor water quality (pH 4.13). Barren, acidic spoil piles line the north and west shores and very little aquatic life present. Runoff from this pond goes into the Little Muchakinock Creek.



Figure 1. Acidic spoil piles.



Figure 2. Acidic spoil piles with pond in background .

Reclamation activities included the clearing of existing vegetation, filling and grading the erosion gullies, smoothing out uneven grades to approximately contours, and neutralizing acid/ and toxic material in the subgrade. Soil was tested to determine lime and fertilizer application rates prior to establishing a successful vegetative cover. This vegetative cover consisted of warm/cool season grass mixture and trees planted in selected areas.

Terraces and outlet structures were sited to reduce erosion. Multiple wetlands were built to capture surface runoff and create seasonal pools that will be used by local wildlife. Riprap and permanent reinforced turf mat were used to stabilize the wetland discharge points.

The two ponds were backfilled in the grading process. Prior to this backfilling, any acidic waters were neutralized and discharged. A new larger 2 ½ acre pond and wetlands were created to mitigate the loss with equal waters. Two of the existing ponds were enhanced. The wetlands and waters of the U.S. mitigation area were seeded above and below the waterline.



Figure 3. Pond being reconstructed.



Figure 4. Pond and terraces being reconstructed.

This reclamation has enhanced the wildlife habitat as shown in the next two photographs taken in March 200t. The pond is approximately 2 ½ acres with over 1 ½ acres of deep water to support fish habitat.

