

LITTLE HOCKING STREAM CAPTURE (Project Number PR-Mn-17)

Completed in 2009, the Little Hocking Stream Capture Reclamation Project closed a subsidence feature within the Congo Run Subwatershed and is the fourth stream capture project to be completed within the Sunday Creek Watershed. It is located in an intermittent stream valley impacted by deep mining that was abandoned in 1927, and again by surface mining operations in the early 1970s.

During surface mining of the area the mining operations placed mine spoil above the final high wall and across the valley, creating an embankment to hold back water during strip mining operations. Over time the valley floor subsided into the abandoned deep mine complex leaving a subsidence measuring 35 feet in diameter and 25 feet in depth.

The drainage area captured by the subsidence totaled 256 acres and an estimated 94 million gallons of surface water annually. Entering the subsidence as net alkaline water, it was estimated that 219 lb/day of alkalinity was being lost through this stream capture, reducing Congo Run's buffering capacity while increasing the amount of acid mine drainage (AMD) being produced underground.

Two incidental stream captures present in two ephemeral tributaries captured an additional 11 million gallons annually of surface water from a 30 acre drainage area. Located downstream of the primary capture, they blocked their respective drainage areas and prevented the tributaries from discharging into the main valley below.

The goal of the reclamation project eliminated the capture of all stream subsidences within the project limits. Initial work consisted of creating a sediment basin at the base of the earthwork area. It then utilized 8,000 cubic yards of spoil cut from the abandoned surface mine to raise the main valley elevation back to its pre-mining conditions. This work consisted of placing non-toxic spoil in eight inch lifts and compacting it with a sheepsfoot roller. The subsidence feature base was filled with dump rock before being covered with filter fabric and addition compacted spoil. A twelve foot wide rock-lined channel was placed in the valley floor to convey the restored stream.

The incidental stream captures were corrected by removing the spoil across the tributaries and installing four foot wide rock-lined channels. Numerous small subsidence features along the slopes of one of the tributaries were abated using a similar fill of dump rock at the base of the features and then filled with lifts of compacted spoil. A total of 964 linear feet of drainage channels was created during work on all stream capture segments. The four acre area affected by the construction was limed, fertilized, seeded, and mulched upon completion.

Tucson, Inc. of New Philadelphia, Ohio performed the work as general contractor at a cost of \$277,125.



(Far left) A stream subsidence capture directs water into a deep mine opening resulting in AMD production downstream; (left) rock lined channels carry the restored stream and surface waters after construction.