CAMERON COUNTY LANDFILL AMD TREATMENT PROJECT
SHIPPEN TOWNSHIP, CAMERON COUNTY, PENNSYLVANIA

The Cameron County Conservation District (CCCD) in conjunction with the Cameron County Solid Waste Authority is proposing to treat acid mine drainage (AMD) seeps that emanate from groundwater springs that are a result of an unreclaimed pre-act mining operation. In 1972 the County decided to locate a landfill at the old stripping cut to control dumping from undisturbed areas throughout the county. The landfill was closed in 1989 and capped with strip mine soils. Years after the landfill was closed operations, a low permeability soil layer was placed over the closed landfill (spoil) to seal the landfill and prevent leachate outbreaks. However, the acid mine drainage seeps from the former mining operation continues to emanate due to the groundwater seeps being perched on the lower clay layers.

CCCD contracted WHM to treat the AMD seeps through a passive AMD treatment technology which utilized two (2) appropriately sized aerobic wetlands which were designed based on data collected including flows and loading rates. The aerobic wetlands were the chosen alternative to treat the seeps due to the high pH and net alkalinity present in the seeps. The construction of the aerobic wetlands has improved water quality in May Hollow Run and Sterling Run.

Basin A was placed at the toe of slope below the landfill disposal area. The wetland was placed within a remnant eroded drainage ditch which formed due to extensive runoff when the landfill was active and before final cover and vegetation was established. The drainage area to Basin B is only 2.6 acres due to upslope diversion ditches installed as part of prior landfill operations. This surface flow plus the average flow of the LF-6 seep was conveyed in a trapezoidal channel located along an access road. This channel was lined with geotextile and R-4 limestone riprap to increase alkalinity and promote aeration before entering the wetland cell.

Basin B was designed to account for high flows and variable water chemistry. Based on the flow and calculated loading rates of iron at 11 lbs/day and manganese at 0.92 lbs/day, a 0.16 acre wetland cell was constructed to adequately treat the seeps as outlined in the AML criteria for aerobic wetland sizing.