

# Mine Drainage TMDLs

- 1997 Consent Decree and subsequent MOU with EPA
  - Assess all waters in the Commonwealth
  - Establish TMDLs for all waters on the 1996 303(d) List
    - 170 non-mining related impaired waters within 10 years
    - 400 mining related impairments within 12 years
  - DEP completed all mining related TMDLs with one exception

# Mine Drainage TMDLs

- Listings were for pH and Metals
  - Interpreted to be pH, Al, Fe and Mn
  - No ionic strength related impairments on the 1996 303(d) List (and have not done any to date)
  - Modeling had to be simplistic to allow for high volume production
    - Stochastic/probabilistic model
    - LTA calculated using sample data at points throughout the watershed
    - $LTA * \text{Average Flow} = \text{TMDL}$

# Kiski-Conemaugh TMDL

- Kiski-Conemaugh TMDL completed in 2010
  - 5,000 mi<sup>2</sup> watershed in southwestern PA
  - Dynamic, mechanistic model (MDAS)
  - Basin broken into  $\approx 750$  subwatersheds
    - Compliance point at the mouth of each subwatershed
    - Compliance with load? Concentration?
    - Need to be able to run the model if concentration
    - Assumes 75% reduction potential for NPS (abandoned sources)
    - New dischargers must take WQ criteria