

## SURVEY PROCEDURE

Background information on topography, geology, coal mining history, hydrology, and water quality of the Mahanoy Creek Watershed was collected together with the establishment of a basic field procedure. Aerial survey photographs were reviewed and a field data collection was performed by assigned personnel. Underground mine maps were obtained and/or reviewed at the Pottsville Office of the Department of Environmental Resources to determine the extent of underground mining.

The above information was correlated and integrated to develop inventory maps showing the extent of underground and surface mining with accompanying refuse piles, coal contours and outcrops, and severity of acid mine drainage pollution in the streams of the watershed.

Seventy-two sampling sites were established to monitor the effects of 31 coal mine discharges. A geochemical study was conducted to determine effects of coal mine drainage on water quality and to evaluate potential abatement techniques. The geochemical data were applied successfully to determine, in some cases, the true source of pollution where the sources of acid mine water was questionable.

During the first month of water sampling (November, 1973) two sets of water samples were collected (at 2-week intervals). Since data for both sampling periods was not significantly different, only one set of samples per month was collected for the remainder of the 12-month sampling period. Temperature and pH were checked and 2 water samples were taken at each sample site. pH of surface waters was determined in the field using a Beckman Model Chem-Mate pH Meter. Field measurement of pH was conducted according to the procedure of Barnes (1). Several subsamples were taken at each sampling site to minimize sampling error.

The second group of samples taken in November included analyses of Al, Ca, Mg, Mn, Na, K, Ni, and Si, as well as the standard acid mine drainage analyses.

In addition, the second group of samples taken in November included two water filled strip pits east of Girardville and a seepage pond east of Ashland.