

## **SUMMARY AND CONCLUSIONS**

On 02/22/05, the Pennsylvania Department of Environmental Protection, Bureau of Abandoned Mine Reclamation (**BAMR**) issued a 90-day emergency contract to Environmentally Innovative Solutions, LLC (**EIS**) to identify and to evaluate options to control an abandoned mine pool creating public health and safety issues within the town of McDonald, PA. With an initial flow rate estimated at 10,000 gpm on 01/25/05, the discharge was controlled by the US Department of Interior, Office of Surface Mining for the first month by pumping at the "blowout" prior to transferring the effort to BAMR. In addition to the constant noise and cost of the pumping operation, closure of public streets and sidewalks was required for continuous access to the pump and to convey the discharge through town about 800 feet, by drain hose and piping, to a stream.

Working with BAMR, EIS developed a team approach with local, state, and federal agencies; local businesses; and residents to maximize data gathering related to the abandoned underground mine, existing public utilities, and current topography. This approach also facilitated the installation and monitoring of piezometers, excavation of test pits, and acquisition of property access. Based on the available data, options were developed for a permanent solution to control the mine pool. During the evaluation of data and development of options with BAMR, EIS continued pumping operations at the "blowout" as necessary.

Based on data obtained from the excavation of test pits, construction of a temporary gravity drain began on 04/09/05. The purpose and result was to discharge water from the abandoned mine pool to "Alexander Run" about ½-mile northeast of the "blowout" on undeveloped land. The landowner, The Aloe Family Limited Partnership, granted full access for temporary activities and permanent facilities. The receiving stream, locally referred to as "Alexander Run", was previously severely impacted by abandoned mine drainage.

Comparing water levels measured at the "blowout", in the piezometers, and at a test pit on "Miller Run" during operation of the temporary drain, identified that converting the temporary facility to a permanent gravity drain (Primary Drain) was the option of choice. Evaluation also supported the installation of a "back-up" facility (Secondary Drain) for alternatively discharging to "Miller Run" and of an Early Warning System at the "blowout". On 04/18/05, a "Design-Build" proposal was submitted to BAMR for implementation of the option. Incorporating recommendations from BAMR and continuing the team approach utilizing local businesses, the following facilities were placed online:

- Primary Drain (05/20/05),
- Secondary Drain (05/09/05), and
- Early Warning System (05/09/05).

Subsequent monitoring by BAMR and EIS confirm the facilities are functioning as designed and intended.