



# Update on the Acid Drainage Technology Initiative (ADTI), the INAP Global Alliance Member Representing the United States

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Figueroa, Devin Castendyk, L. E. Eary and Jim J. Gusek

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# ADTI Presentation Overview

Operations Committee

Metal Mining Sector

Coal Mining Sector

# ADTI Operations Committee

- Coal Mining Sector
  - Steering Committee Chair
  - Industry
  - Federal Agencies
  - State Agencies (Interstate Mining Compact Commission)
  - Academia (National Mine Land Reclamation Center)
- Metal Mining Sector
  - Steering Committee Chair
  - Industry
  - Federal Agencies
  - State Agencies
  - Academia (University Consortium and Network)

# Workbooks in for Publication

## **Volume 1:** Basics of Metal Mining Influenced Water

Editors: V. T. McLemore (C. Bucknam, J. J. Gusek, & H. Posey, Assoc. Eds.)

Status: Published 2008

Authorship: 29 contributors

Contents: 6 chapters and glossary

Subjects: Characteristics, Metal Mining Methods and Phases, Environmental Controlling Factors, & Potential Environmental Impacts

## **Volume 2:** Prevention and Treatment of Water Influenced by Metal Mining

Editors: J. J. Gusek and L. A. Figueroa (C. Bucknam, Assoc. Ed.)

Status: Published in 2009

Authorship: 21 contributors

Contents: 5 chapters

Subjects: Physical Environment, Planning and Design Considerations, Source and Migration Control, and Treatment

## **Volume 3:** Mine Pit Lakes: Characteristics, Predictive Modeling, and Sustainability

Editors: D. Castendyk and L. E. Eary

Status: Publication expected in late 2009

Authorship: 27 authors and co-authors

Contents: 8 chapters containing 24 papers

Subjects: Characteristics, Conceptual models, Prediction, Remediation, & Sustainable Development and Post-Mining Use

# Workbooks in Preparation



**Volume 4:** Geochemical Modeling for Mine Site Characterization and Remediation

Editors: A. Nicholson, R. Verburg  
Authorship: D. Nordstrom

**Volume 5:** Techniques for Predicting Metal Mining Influenced Water  
Editors: D. Williams

**Volume 6:** Sampling and Monitoring for the Mine-Life Cycle  
Editors: V.T. McLemore, K.S. Smith, C.C. Russell, and A.R. Dickens  
Status: Publication expected in 2010  
Authorship: ~15 authors and co-authors  
Contents: 4 chapters and 7 appendices  
Subjects: introduction, sampling and monitoring program, other concerns, research needs/topics, case studies, summary of collection and analytical methods, examples of sampling and monitoring plans, ASTM, EPA, and USGS standard methods, applications of geoenvironmental models

# Other ADTI-MMS Projects

- Liaison Activities
  - Interstate Technology and Regulatory Council
    - Statement of Mutual Intent 2008
    - Cooperation in developing technology case studies.
  - International Network for Acid Prevention
    - Global Acid Rock Drainage Guide
      - Members participation in development team and steering committees
      - Initial workshop in October 2008
    - Global Alliance
      - Regional Meetings and periodic conference calls
- Scientific Review Team
  - Completion of Chevron Mining, Inc. Waste Rock Pile Stability Research Project
    - 5 year program from solicitation of proposals to review of final project reports.
- Technical Program – SME Annual Meetings
  - Papers Available @ [www.onemine.org](http://www.onemine.org)

# Acid Drainage Technology Initiative Coal Mining Sector



- **NOT A REGULATORY OR POLICY DEVELOPMENT PROGRAM.**
- **A GOVERNMENT/INDUSTRY/UNIVERSITY JOINT VENTURE DEDICATED TO THE DEVELOPMENT AND USE OF BEST SCIENCE APPLICATIONS ON THE PROBLEM OF ACID MINE DRAINAGE.**

**[HTTP://WWW.ACIDDRAINAGE.COM/](http://www.aciddrainage.com/)**

# ADTI Coal Sector Handbooks and White Papers



Prediction of Water Quality at Surface Coal Mines

Handbook of Technologies for Avoidance and Remediation of Acid Mine Drainage

Problem Summaries- Coal Combustion By-Products, Passive Treatment, Water Quality, and Underground Mining

Handbooks at <http://www.aciddrainage.com/>

# ADTI Coal Sector Activities

Selenium distribution in coal overburden, central Appalachia USA.  
Selenium treatment in mine waters using zero valent iron.



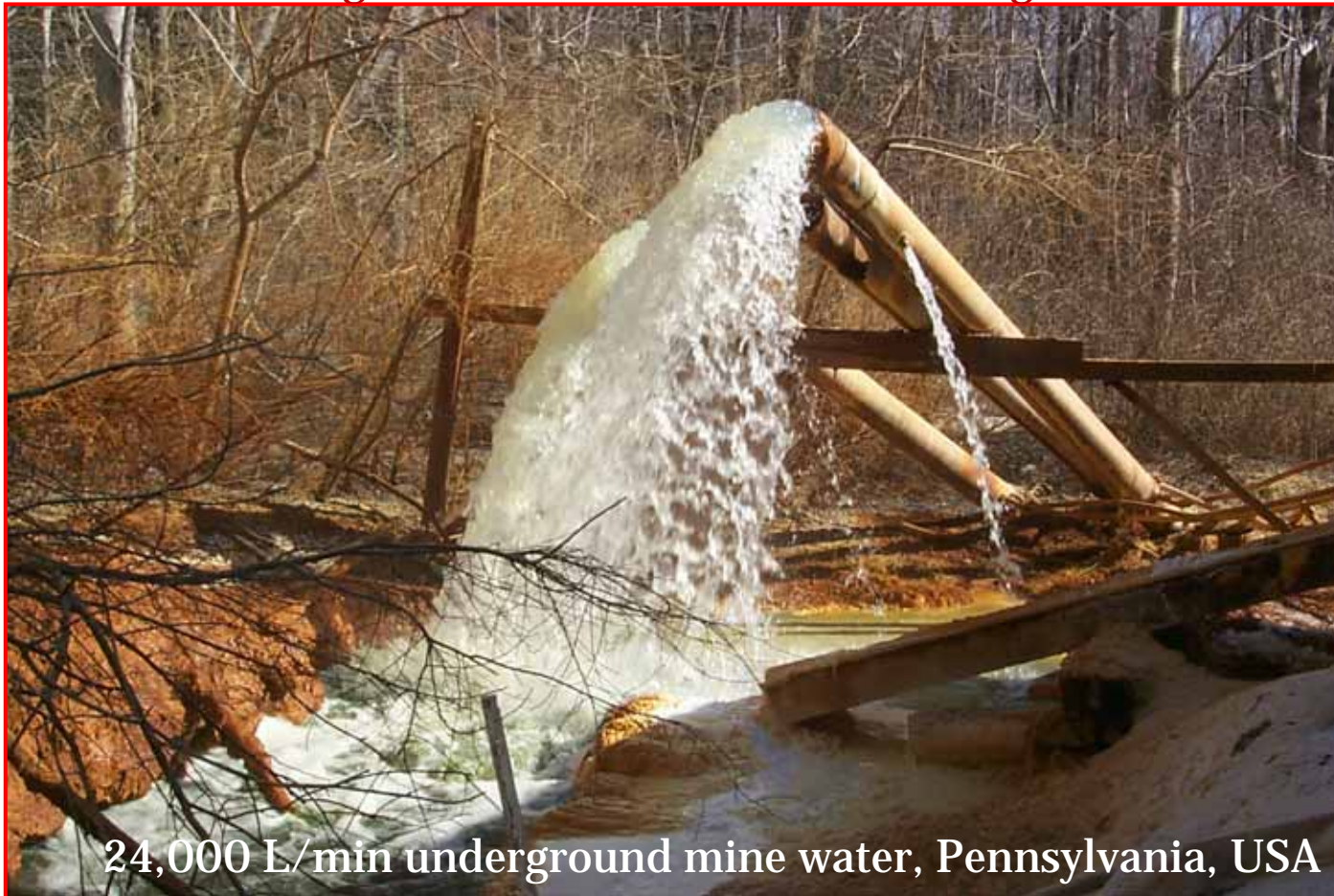
# ADTI Coal Sector Activities

**A standardized column leach protocol for coal overburden.  
Weekly leaching and 10%CO<sub>2</sub> atmosphere.**



# ADTI Coal Sector Activities

**Flooded Underground Coal Mines, Water Quality and Contaminant Transport.  
Underground Mine Infiltration/Recharge Rates**



24,000 L/min underground mine water, Pennsylvania, USA

# ADTI Coal Sector Activities

## Review Passive Treatment Studies and Technology for Coal Mine Drainage



**Aerobic Wetland Treating Coal Mine Drainage, Net Alkaline With Iron, Missouri, USA**

# ADTI Coal Sector Activities

Total Dissolved Solids and Biological Impairment in Small Streams, Appalachia, USA



THE END



Thanks for  
Participating in  
the INAP Global  
Alliance!