



**US Army Corps
of Engineers®**
Engineer Research and
Development Center

Abandoned Mine Land Community of Practice

Description

The U.S. Army Corps of Engineers Abandoned Mine Land (AML) Community of Practice (CoP) serves as a resource pool for the Corps and its partners to address the environmental risks and challenges associated with the Nation's abandoned mine lands. The AML CoP provides expertise in all technical and policy areas of abandoned mine land remediation and restoration to effectively plan, characterize, design, and construct AML-related projects with its partners in a timely and cost-effective manner. The CoP comprises engineers and scientists, planners, real estate and legal counselors, and project managers from throughout ERDC, Corps Districts, and Corps Headquarters.



Acid Mine Drainage Treatment System

Capabilities

The skills and knowledge within the AML CoP and problems that members have successfully treated include the following:

Investigations

- Acid mine drainage Total Maximum Daily Load (TMDL) analysis
- Archaeology/cultural resources assessment
- Chemical validation and interpretation
- Construction
- Cultural resources assessment
- Ecology/ecosystem/water quality modeling
- Environmental economic analysis
- Environmental risk assessment
- Geochemistry/geochemical modeling
- Geology/geotechnical engineering
- Geophysical surveying
- GIS database development/population
- Human health and ecological risk
- Hydrology and hydraulics
- Mine pool modeling
- Monitoring design/installation
- Remote sensing and GIS applications

Repository design and construction
Revegetation and bioremediation
Stream restoration/geomorphology
Surface water/groundwater modeling
Testing of innovative technologies
Threatened and endangered species management
Wetlands enhancement design and construction

Oversight

AML policy and guidance
Construction management
Environmental law
Field engineering
Project management and coordination

Supporting Technology

The CoP possesses state-of-the-art hard and soft tools that it can rapidly bring to bear on problems. Hard tools include facilities and equipment such as the following:

Data acquisition systems
Digitized Elevation Maps (DEM)
Directional groundwater probe
Electromagnetic gradiometer
Flow measurement systems
Gamma sensor
Geographic Data Technology (GDT)
Global Positioning System (GPS)
Ground penetrating radar
Hazardous, Toxic, and Radioactive Waste (HTRW) and analytical chemistry laboratories
Remote sensing
Seismic-acoustic measurement
Site Characterization and Analysis Penetrometer (SCAPS)
Spectroradiometer

The soft tools are numerical modeling and software for the following:

1-, 2-, and 3-D surface water hydraulic software
Discrete Element Modeling (DEM)
Geochemical modeling software
Geotechnical software
Groundwater modeling software
Hydrological software
Mining Data Analysis System (MDAS)
Sediment transport modeling software
Water quality modeling software
Wetland/watershed data analysis software

Benefits

The AML CoP works to ensure that a spirit of cooperation and collegiality exists across the ERDC laboratories and the Corps, conducting studies involving the remediation of abandoned mine lands. The collaborative synergy of the AML CoP benefits its members and partners through the sharing of information and the collective expertise that can be applied to solving problems.

ERDC POCs

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