Preservation of Archival Mining Maps: Increasing Access and Safety

CONSOL Energy Mine Map Preservation Project
US Dept. of the Interior, Office of Surface Mining, Reclamation & Enforcement (OSM)
Pennsylvania Dept. of Environmental Protection (DEP)
University Library System, University of Pittsburgh
CONSOL Energy Inc.
• Background
• Workflow
• Collection
• Conservation
• Transportation & Scanning
• Use of digital files
About a year after the Quecreek accident, the federal Office of Surface Mining gave Pennsylvania $1 million for equipment to scan existing maps into digital format for Internet usage.

"In the future, any municipal engineer, planner or zoner, developer -- anyone who plans to do any earth disturbance -- can go online and bring these maps up," Rathbun said.

"They can say, 'Hey, there's a mine here,' rather than having it be a surprise."
Mine subsidence damage
Preservation of physical maps at the University of Pittsburgh Preservation Dept.

Dirt is removed by dry or wet cleaning methods.

Tears are mended with muslin cloth and EVA adhesive.

Maps are scanned on a Cruse Table Scanner CS 285/1100 ST/FA equipped with a 58” x 90” vacuum table at the National Mine Map Repository (NMMR) located in Greentree, PA.

Maps are scanned at:
- 24 Bit True Color
- 220 to 630 DPI
- Approx. 1.1 GB file size

Stiff maps that crack when opened are humidified, unrolled slowly and dried flat between wool felts and polyester webbing.

The digital images are used in various applications supporting:
- Homeowners determining if their house is undermined; requiring Mine Subsidence Insurance (MSI) offered by the PA-DEP
- Land Reclamation projects
- Mine Safety; where it is critical to preserve the most accurate and up-to-date map of abandoned mining
- Engineers involved in gas exploration and new underground mining operations
- The protection of miners, the public and the environment
CONSOL Energy Collection

- Over 8,000 total items
- 1854-2002
- Bulk 1880-1940

..and about 500 hardback maps
Maps rolled inside of maps
Hardback mine maps

- Paper backed with canvas
- Oversized
- Master copy
- Drafted by hand
- Created 1860s - 1950s
In-house database
Geography tab
In-house Database
Condition Tab

Local_Sheet_ID: 27-A-10
Sheet_Name: Eureka Waverly
Map_Type: Underground Mi
Shelf Location: 10-1
Current Location: Pres Selts
Status: To be treated

Survey_date: 2/5/2008
Condition comments:
dirt L edge

Treatment proposed:
Humidify and Flatten

Record: 1 of 1
Humidification & Flattening

- 5’ x 8’ Museum Services Humidity Dome
- One map takes an average of 5 hours to humidify
Mending Maps with Tissue and Paste
Re-lining
Re-lining
Cruse Table Scanner CD 285/1100 ST/FA

Area: 58 x 90”

DPI: 240-300

Suction or plexiglas
Archival Storage & Use

- Archival storage
- Use in reading room
Project Statistics

700 Surveyed
415 Dry Cleaned
131 Humidified & Flattened
144 Mended
76 Tape Removed
31 Re-lined
413 Scanned
Increased Access
Use of Digital Files

- Homeowners determining mining conditions in their area
- In response to abandoned mining incidents
- Municipal projects
- Mine reclamation projects
- Mine safety
- Gas exploration

Ultimately the protection of miners, the public and the environment
Mine subsidence damage
How to check if your house is undermined?

http://www.dep.state.pa.us/MSIHomeowners/municipalitymappinglist.html#AlleghenyCounty
Check Mining Conditions in Your Area
For the protection of miners, the public and the environment

- Homeowners determining mining conditions in their area
- In response to abandoned mining incidents
- Municipal projects
- Mine reclamation projects
- Mine safety
- Gas exploration
Thank you

http://www.pitt.edu/~aeb59/index.html
or search “mine map preservation”