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**Preservation, Inventory, and Catalog of the Files of  
the Arizona Department of Mines and Mineral  
Resources**

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## **Introduction**

As part of the Energy Policy Act of 2005, the U.S. Geological Survey was tasked with creating a National Geological and Geophysical Data Preservation Program (NGGDPP). This Program is intended to work principally with the nation's geological surveys to: (1) archive geologic, geophysical, and engineering data, maps, well logs, and samples; (2) provide a national catalog of such archival material; and (3) provide technical and financial assistance related to the archival material.

The Program is envisioned as a national network of cooperating geoscience materials and data repositories that are operated independently yet guided by common standards, procedures, and protocols for metadata. The holdings of all collections will be widely accessible through a single, common, and mirrored Internet-based catalog, the National Digital Catalog, thus maximizing the availability of and interconnectedness of all the collections.

## ***Scope and Implementation***

In 2011-2012, the AZGS was provided with \$41,495.62 for Data Rescue and Inventory. The Department of Mines and Mineral Resources (ADM MR) was merged with the AZGS in FY12, and AZGS began a comprehensive inventory of archival collections formerly held by ADM MR. The collections' contents are geographically focused on Arizona, but many, particularly those donated by companies and individuals, include reports, maps, and files on other states and countries. The first step in the inventory was to determine the scope and size of the ADM MR collections and develop a plan for estimating cost and prioritizing the digitization of the records.

A librarian was hired to direct and coordinate this project in October 2011. Since then a number of cataloging efficiencies for the project have been implemented. Microsoft Access was chosen as the database over Excel in order to better control typographical errors and reduce data entry redundancy. This database is in use to create inventories of all the collections. Once fully completed, the inventories can be built upon to create geographic metadata for each item.

## ***Budget and Expenditures***

The FY12 budget for this project is as follows:

### **NGGDPP Grant**

Personnel \$ 18,636

Fringe \$ 6,083

Prof'l Svcs \$ 5,130

Other operating Expenses \$ 328

Indirect Costs \$ 11,319

**TOTAL \$ 41,496**

### **State Expenses**

Personnel \$ 59,822

Prof'l Svcs \$ 39,158

Travel \$ 205

**TOTAL \$ 99,185**

## ***Inventory & Data Rescue Plan***

The initial task of this project was to complete a comprehensive overview inventory of files in the ADM MR files and archives. This included making an accurate count of the number of each type of file (e.g., geologic-commodity-economic reports, maps, studies, datasets, sample analyses, analytical results, etc.) along with location, source, description, and other metadata as

appropriate for each. The resulting catalog would provide the basis for a more accurate determination of the item-level metadata records that would eventually be produced in subsequent phases of the project.

As part of this project, AZGS was to develop a rescue plan adapted to the possible options, including whether the archives could continue to be housed in their current location or have to be relocated. In the event of the latter, AZGS would evaluate whether it would be advantageous to move the archives to the AZGS Tucson headquarters to complete inventorying and eventual digitization before creating a permanent repository.

## **Inventory & Data Rescue (Results)**

### ***Summary***

- Twenty-seven out of 30 collections of mining records have been inventoried with finding aids available online at the AZGS repository. These inventories are currently available via the AZGS Document Repository at <http://repository.azgs.az.gov/collection/103>
- Data Management Plan was finalized for data preservation, June 2012
- Survey-wide Digitization Plan was created based on assessment and recommendations of federal, local, and industry standards, January 2012
- Relational database established for cataloging, querying and sharing metadata, March 2012

The first stage of metadata gathering was an inventory of the special collections held at the Phoenix Branch of the AZGS (former ADMMR offices). Partial lists were compiled from previously created finding aids. A more comprehensive inventory followed minimal-level archival processing procedures.

For each resource metadata was created. Mandatory fields for minimal archival registration included:

- Collection name
- Resource ID
- Title
- Dates (oldest and newest)
- Restriction (yes or no, due to copyright or confidentiality concerns)
- Size (letter, legal, ledger, oversize)
- Data type (text, map, image, sample, dataset)

Recommended fields:

- Location (state and county)
- Notes (e.g. water damage or more detailed location information)

The initial inventory completed in this year has made an accurate count of folders and photos across the twenty-seven collections. Almost every folder contained a report of some kind from a brief information summary to detailed reports with maps and drill logs. Titles and theme

keywords characterize what types of reports and information are included. Data types for folders indicate whether it contains maps or images along with the reports. For the most part, photos were previously separated from their folders and stored separately. When photos were found during the inventory, their location was documented and they were moved to a subseries within their collection to better prepare them for conservation and digitization. The MS Access database allows us to identify which photos came from which folders. Using Microsoft Access forms, the librarian created a data entry interface with controlled values, so metadata records can be easily entered and data types are controlled. The database was designed so it could be build upon in further projects to create complete geographic metadata. The abundance of records entered just for the inventories made it advantageous that the data in the Access database could be encoded in the xml format required by the National Digital Catalog or a tabular format for the AZGS Document Repository.

A Data Rescue Plan was developed for the ADMMR records and became the basis for a Arizona Survey-wide Data Management Plan. When the eventual digitization of ADMMR files is complete, the physical files are to be deposited to the Arizona State Archive. Their physical preservation can be best ensured in a limited access environment. The information content of the files will by then be accessible through the AZGS Document Repository and the USGS National Digital Catalog.

### ***Inventories created***

*Table 1 provides an overview of the number of records in each collection*

<b>Records</b>	
A. F. Budge Mining Ltd. mining collection	325 folders
ADMMR mining collection	4219 folders <sup>1</sup>
Arimetco mining collection	86 folders
Cambior Exploration USA Inc. mining collection	390 folders
Doug K. Martin mining collection	253 folders
Edwin Noel Pennebaker mining collection	149 folders
Fred Hohne mining collection	15 folders
George M. Colvocoresses mining collection	422 folders
Grover Heinrichs mining collection	1485 folders
Hahman mining collection	36 folders, 40 maps
Jaba Resources mining collection	40 boxes of unprocessed files <sup>2</sup>
James Doyle Sell mining collection	1873 folders
John E. Kinnison mining collection	468 folders

Kelsey Boltz mining collection	512 folders
Larry Kersey mining collection	156 folders
Reconstruction Finance Corporation AZ records	226 folders
Richard Mieritz mining collection	167 folders
Roland Mulchay mining collection	338 folders
Sylvia Fink mining collection	141 folders
Unocal mining collection	275 folders
W. H. Crutchfield, Jr. mining collection	50 folders
Walter E. Heinrichs, Jr. mining collection	1143 folders
West Oatman Project mining collection	92 folders
<b>Photos</b>	
ADMMR Photo Archive	6508 photos
Arthur L. Flagg mining photo collection	350 photos
Frederick Warren Osborn AZ photo collection	93 photos
Guy Atlee mining photo collection	66 photos
Mason Coggin mining photo collection	210 photos
Richinbar Mine photo collection	151 photos
<b>Maps</b>	
ADMMR Map collection	Approximately 10,000 maps <sup>3</sup>

<sup>1</sup> ADMMR mining collection has a backlog of 5 feet of folders whose titles do not match a mine record

<sup>2</sup> Jaba Resources records remain in storage and are inaccessible at this time.

<sup>3</sup> The map collection is grouped by subject and location, but an item-inventory remains to be finished

### **Availability**

Twenty-seven of the preliminary inventories of special collections are currently accessible through the AZGS Document Repository, <http://repository.azgs.az.gov/collection/1322>. The inventories will be uploaded to other repository sites such as the USGS National Digital Catalog. The remaining three special collections inventories will be accessible by December 2012. The ADMMR Map Collection could not be counted at the time the project ended as the maps were being digitized by outside document scanning vendor. The A. F. Budge collection was severely disorganized and required further organization to be useful for researchers. The Jaba Resources Collection was stored in off-site storage and was inaccessible at the time.

## **Acknowledgements**

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## **Bibliography and Links**

National Geological and Geophysical Data Preservation Program,  
<http://datapreservation.usgs.gov>

USGIN Metadata Recommendations for Geoscience Resources,  
[http://repository.usgin.org/uri\\_gin/usgin/dlio/335](http://repository.usgin.org/uri_gin/usgin/dlio/335)