# MINERALS DATA AND INFORMATION RESCUE IN ALASKA (MDIRA)

# 2004 ANNUAL REPORT



## **Participating organizations:**

U.S. Geological Survey (USGS) U.S. Bureau of Land Management (BLM) U.S. Department of Agriculture – Forest Service (USFS) Alaska Division of Geological & Geophysical Surveys (DGGS) Alaska Land Records Information Section (LRIS) University of Alaska (UA) Alaska Federation of Natives (AFN) Alaska Miners Association (AMA) And numerous other individuals, companies, professional organizations, and government agencies

> Prepared for Congress by MDIRA Liaison Committee March 2004

## **EXECUTIVE SUMMARY**

The goal of the Minerals Data and Information Rescue in Alaska (MDIRA) program is to recover and make easily available the full body of Alaska mineral information through a coordinated system that provides efficient access or indices to all minerals related files, documents, and physical samples held in the public domain. This body of information includes geologic data now out of print as well as data collections from agency and private-sector geologists that was never published, geophysical data, state and federal mining claim information, geochemical data sets, and M.S. and Ph.D. dissertations on Alaska geology that exist in the obscurity of university libraries across the nation.

Congress initiated the MDIRA program in response to recognition of the importance of Alaska's mineral resources to the nation and a concern that decades of important Alaska minerals information were being lost, or were in imminent danger of being lost. Much information has become unavailable to the public, industry, and even the government agencies that generated it. Recent downsizing of both federal and state geological agencies has left large volumes of data stranded in unorganized files that, almost surely, will be disposed of as institutional memory of their significance is lost through continued personnel attrition.

The FY 1997 U.S. Geological Survey's appropriation bill stated:

"The [Senate Appropriations] Committee expects the [U.S. Geological] Survey to report to the Committee no later than March 31, 1997, on the full scope of the geophysical, geologic, and natural resource data collection and storage issues in Alaska. The Survey should work with the University of Alaska, the State of Alaska, the Alaska Federation of Natives, and other interested parties."

Subsequently the U.S. Geological Survey, in cooperation with a multiagency Alaska liaison committee, prepared a report to Congress in March 1997 identifying five major issues regarding Alaska mineral data. That report provided specific objectives toward the goal of making all Alaska minerals information accessible to the public via computer technology as well as in traditional formats in state and federal repositories in Anchorage, Fairbanks, and Juneau.

The five issues identified during a thorough canvass of Alaska's geological mineral resource private-sector, state and federal agency, and academic communities were:

- 1. *Library resources:* Network the existing libraries; prepare a guide to geologic and minerals information; and catalog all the major collections of geology and minerals information.
- 2. *Databases:* Develop up-to-date digital databases of Alaska mineral deposits, geologic literature, and geochemistry data.
- 3. *Physical Samples:* Provide for the physical preservation of core and other physical samples collected in the field; in particular, need to ensure the continued existence of the Geologic Materials Center.

- 4. *Mining claim information:* Develop an authoritative, digital, claim information system to include both State and Federal claims, including a business process that would keep it up to date.
- 5. *New Information:* Provide for development, archival, management, and dissemination of new geologic maps and minerals information. This proposed component of the program was not funded.

Pervading all of these issues was the recognition that if the data and information recovered were to be kept safe from again slipping into obscurity and loss, they would have to be made more accessible to the public. Data that are used are data that are valued and protected. Therefore, all five of the above issues embody a commitment to convert as much of the information as appropriate to digital form accessible via the World Wide Web. In those instances where that is impossible, for example physical mineral samples, indices of the archival holdings will be made available online.

Beginning in fiscal year 1998, Congress has provided annual appropriations for MDIRA through the U.S. Geological Survey and U.S. Bureau of Land Management. Final appropriation for MDIRA was in fiscal year 2004. A liaison committee consisting of representatives from stakeholder organizations in state government, the University of Alaska, Native organizations, and the private sector oversees program planning, budgeting, and reporting.

Under MDIRA, a tremendous volume of information has been recovered and converted to digital data files since 1997. Many of these files are now accessible via the World Wide Web through links to the participating organizations that are assembled on a single Web site, <<u>http://akgeology.info/</u>>. Information at these linked sites must still be searched individually, requiring users to be familiar with their holdings. This situation falls short of the original goals of the program in that easy access to the data through a single portal has not yet been achieved. This deficiency is now a primary focus of the MDIRA program with its final funding allocation in federal fiscal year 2004.

The liaison committee projects that development and loading of the large organizational databases and implementation of the Web portal to seamlessly serve these data online will be completed by the end of 2006. By that time, the last of the original data and information files identified as being at risk will be recovered in physical or digital form and an interagency database management system will be in place that will allow for maintaining the historical data and updating the database as new information becomes available.



## **PROGRAM STATUS**

In compliance with the original Congressional mandate that established the MDIRA program, the liaison committee meets regularly to review the progress being made by the funded agencies. These meetings are attended by staff from the Alaska Department of Natural Resources, the University of Alaska, the Alaska Resource Library Information System and other state libraries, the Alaska Federation of Natives, the Alaska Miners Association, and at various times, other interested members of Alaska's mining community. U.S. Geological Survey and U.S. Bureau of Land Management representatives are invited to these meetings to provide progress reports on the many tasks comprising the MDIRA program and to listen to Alaska stakeholder comments and concerns relevant to the ongoing and scheduled work.

The following is a brief summary of major milestones and accomplishments achieved by MDIRA in each of the five program areas since its inception in 1997:

### Library resources

- <u>Guide to Information</u>: Published a *Guide to Alaska Geologic and Mineral Information* in 1998, which is available in printed form and online. The updated version of the guide will be published and available to the public in printed form about April 1, 2004. An online version will soon follow.
- <u>Digital conversion of DGGS publications</u>: Completed conversion of all DGGS publications to digital files and made them available online via the DGGS Web site
- <u>Digital conversion of USGS publications:</u> Scanned 95 percent of U.S. Geological Survey Bulletins and Professional Papers on Alaska geology. Maps are being compressed to MrSID format for serving online via the DGGS Web site. Text is awaiting loading into the enterprise database.
- <u>Upgrade and digital release of mineral-access corridor maps</u>: Converted 376 legacy GISbased geologic, geologic-materials, hazards, and data quality maps of proposed mineral access corridors in 78 quadrangles to modern GIS format, completed metadata, and made the maps available to the public in hard-copy. Georeferenced MrSID files will be made accessible online in 2004 via the DGGS Web site.
- <u>Index of unpublished USGS data</u>: Indexed and made accessible Project History files (geologic notebooks, field map files, paleontology files, and petrographic collection) and Geologic Subject files (notes, unpublished reports, speeches and lectures, correspondence, reprints, and historical materials) in the USGS Alaska Technical Data Unit research collection.
- <u>Library catalogs of minerals information</u>: Cataloged library materials and produced Internet catalogs for minerals libraries in Anchorage, Fairbanks and Juneau. The materials circulate to the public.
- <u>Anaconda data index</u>: Indexed and made accessible the private Anaconda minerals data collection (a \$30 million exploration project throughout Alaska never before in public domain).
- <u>Index of unpublished USGS data:</u> Indexed and made accessible on the Internet unpublished USGS information on Alaska.
- <u>Topographic map index</u>: Indexed historical Alaska topographic maps available at libraries.

- <u>Index of theses and dissertations:</u> Collected and indexed university theses and dissertations about Alaska geology.
- <u>Alaska Minerals Industry Data Index</u>: Completed the Alaska Minerals Industry Data Index (AKMIDI), a BLM inventory of minerals data held by industry. The inventory is awaiting final releases from contributors before the data are made available to the public.

## Databases

- <u>Alaska Resource Data File:</u> Completed Alaska Resource Data File (ARDF) compilations of information on mines, prospects, and mineral occurrences for the Big Delta, Black River, Tanacross, Kantishna River, Charley River, Eagle, Ruby, McCarthy, Nabesna, Wiseman, Juneau, and Talkeetna Mountains quadrangles. The last 17 (of 153) Alaskan quadrangles are now in progress.
- <u>Alaska Geology Map Index</u>: Released the first version of an application that portrays the locations of Alaska geologic maps from all government agencies in a single, interactive, Internet-accessible location. The site, accessible online at <a href="http://maps.akgeology.info/">http://maps.akgeology.info/</a>, currently contains about 300 citations and outlines for DGGS-authored geologic maps. USGS maps will be added to the map index over the next year.
- <u>DGGS enterprise database</u>: Established an enterprise database management system for DGGS and began populating it with existing Alaska minerals and geologic data.
- <u>FGDC-compliant metadata for DGGS data</u>: Established a process for regular and consistent documentation and archiving of new DGGS geospatial data, bringing the data into compliance with Federal Geospatial Digital Committee (FGDC) Metadata Standard.
- <u>Upgraded DGGS publications bibliography</u>: Completed upgrade of DGGS publications bibliography with inclusion of available digital data files associated with publications and loading into the central database system.
- <u>Web-based distribution of DGGS publications</u>: Developed a Web-based system utilizing the central DGGS database management system for online public distribution of publications in digital form, including digital data used in creating publications. The system will be launched online in April 2004.
- <u>Web-based geochemical data system</u>: Initiated development of a Web-based system for searching and displaying DGGS geochemical sample analysis data by geographical area; deployment expected in September 2004.
- <u>USGS geochemistry database</u>: Completed cleanup and compilation of all USGS non-rock data for Alaska (RASS and Pluto databases). A CD-ROM containing analytical data for approximately 153,190 stream-sediment, soil, organic material, and water samples was released in the Fall of 2003.
- <u>USGS fossil database</u>: Completed database design and began data entry of georeferenced Alaska macrofossil information that is important for constraining the ages of mineral deposits. Approximately 2,000 of 12,000 sites have been entered to date.
- <u>Multi-agency geologic bibliography</u>: Initiated development of a multi-agency bibliography system for Alaska that will allow users to select a geographic area of the state and access all agency geologic research papers and maps related to that area. Technical work on advanced document management systems is underway.
- <u>Alaska Minerals Information System (AMIS)</u>: Developed the Alaska Minerals Information System to make the former U.S. Bureau of Mines (USBM) minerals data available to the public. Database was converted to Informix and updating of the new system started in 2003.

- <u>Conversion of USBM files and maps to electronic format.</u> Information will be released to the public after indexing is complete and sensitive documents have been screened out.
- <u>Digital release of BLM and USFS minerals reports</u>: Converted BLM and USFS minerals reports to digital format and scanned unpublished or out-of-print reports. Previously published reports are being made available on the Internet. Unpublished reports will go through BLM review process and be released as open file reports.
- <u>Conversion of BLM and USBM analytical data to digital</u>: Digitized sample locations, sample cards, and analytical geochemistry data from BLM and USBM mineral assessment investigations. Remaining work in resolving sample location problems and data gaps will be completed by September 2004.

## Physical samples

• <u>Indexing of BLM minerals samples</u>: Developed a database for the BLM mineral pulp sample and surface rock-sample collection at the DGGS Geologic Materials Center. About 60 percent of the pulp-sample collection and 70 percent of the surface/near-surface rock collection have been entered into the database. Indexing of entire remaining hard-rock minerals collection will be initiated in 2004 and will be made available online in 2006.

## Mining claim information

- <u>Mining claims on-line</u>: Developed a greatly improved, spatially referenced Oracle-based mining-claims records system, now available online at <a href="http://akmining.info/">http://akmining.info/</a>, with the option of viewing adjacent state land status. Future plans include adding geophysical data to view with claims; portraying ownership blocks by common customer; and allowing users to extract selected GIS data. A meeting with public users of the system is planned for April 2004. Site generates more than 1,100 visits per month.
- <u>Recorded mining documents on-line</u>: Mining documents from July 1, 2001, are available on-line for the public at <u>http://akrecorder.info/</u>. Work is in progress to add mining documents prior to July 2001, including scans of historical Kardex Records. About two-thirds of all recorded surveys are now available on-line.
- <u>Multi-agency minerals resources & land records web portal</u>: A preliminary product was completed and delivered to the mining community via the <u>http://akgeology.info/</u> web site (see following page). This site provides a high-level location for accessing a wide variety of the information resources produced by the MDIRA initiative and other related programs in recent years. Advanced searches being developed will span agencies' databases based on criteria of geography, subject area, and author.

### New information

This proposed component of MDIRA was not funded by Congress. However, MDIRA tasks are undertaken and completed with a view toward preserving both existing and future minerals information. As participating organizations develop methodologies for recovering, managing, and making available the legacy Alaska minerals information, they are building many of these methodologies into their ongoing business processes. This approach ensures that, following termination of this program, the large body of recovered information is preserved and maintained in a dynamic fashion whereby newly generated information is continually added and made available to the public.

## ALASKA MINERALS & GEOLOGIC INFORMATION ONLINE

Alaska minerals data and information that have been made publicly available as a result of the MDIRA program are now accessible through a single Web site, <u>http://akgeology.info</u> (see below). Currently this site consists of links to the various agency sites where these data are maintained. With MDIRA support, the participating agencies are developing a prototype interagency online portal through which all recovered Alaska minerals and geologic data as well as new agency data will be available through an enterprise system that will retrieve information from the distributed databases through a single search engine.



Welcome to MDIRA Portal Home page. This new site will evolve from a collection of links pertaining to geology, minerals, and land records in Alaska into a integrated system which allows the user to combine this information in ways which promote minerals exploration in Alaska. Additional information about this project can be obtained from the Interagency Minerals Coordinating Group website. Please note that not all of the links on this page are part of the MDIRA program, but are directly related and thus are included here.

#### Land Records

- ▶ plats.LandRecords.info
- BLM and DNR Plats & Surveys Ias.LandRecords.info
- Live DNR Case-file information www.ak.blm.gov/alis
- BLM Alaska Land Information System
- BLM General Land Office Akrecorder.info
- State Recorder's Office documents
- Uniform Commercial Code documents akmining.info
- Federal and State mining claims via an interactive map

#### Payments/Compliance

- Introduction description of the second state of the second stat
- http://www.dnr.state.ak.us/mlw/mining DNR DML&W Mining Section
- http://www.dnr.state.ak.us/mlw/forms/ State Mining claim-related forms
- http://www.ak.blm.gov/ak940/index.html BLM Division of Energy & Solid Minerals
- http://www.ak.blm.gov/ak940/forms/forms.html BLM Mining-Related Forms

#### Maps/Publications

- Guide to Alaska Geologic and Mineral Information All known sources geologic and minerals information
- Alaska Geology Map Indexer
   Downloadable maps
- DGGS Publications On-Line Downloadable
- Publications
  DNR Map Library More downloadable maps
- IMCG Digital Index of Geologic Information Bibliography of many agency publications
- Alaska Resource Data Files Summary descriptions of known mineral occurrences
- USGS Publications (off-line)

#### Geology/Data

- RASS, PLUTO Geochemistry Summary of non-rock USGS geo-chemistry
- NURE Data National Uranium Resource data
- Alaska Minerals Locations DB Locations of Alaska Minerals Data (MAS/MILS)

#### Libraries/Archives

- ARLIS Minerals Library Catalog Print copies of minerals information
- UAF Library Catalog Print copies of minerals information
- Alaska Historical Collections They have donations of mining materials
- John Rishel Mineral Information Center
- BLM Minerals Collection Catalog USGS Alaska Tech Data Unit
- Index of unpublished USGS materials on Alaska

### Minerals Data and Information Rescue in Alaska Spending Plan and Milestones 2002–2004

Dollar amounts in thousands

Tasks	Project Lead <sup>1</sup>	FFY02 USGS Actual	FFY02 USBLM Actual	FFY02 Status	FFY03 USGS Actual	FFY03 Status	FFY04 USGS Actual	FFY04 Status
LIBRARIES								
a) Interlibrary communication	ARLIS	10			5		5	*
b) Guide to minerals information & update	DGGS	20			40	Update *		
c) ARLIS, USGS, AKTDU, BLM/Juneau, collection catalogue		90			100		25	*
ARLIS USGS Collection	ARLIS			*				
USGS Alaska TDU	USGS					*		
Juneau BLM minerals information	ARLIS					*		
Alaska geologic thesis acquisition	UAF							*
d) Internet accessible indexes for private mineral property files, legacy public property files,			475					*
USDA-FS & BLM file indexing	USFS BLM					*		
Inventory private-sector minerals data - AKMIDI	ARLIS							*
Archive unpublished agency and private-sector field data	DGGS USGS							*
e) Convert priority maps & reports to digital files		300	400		160	*		
Scan DGGS maps & reports	DGGS					*		
Mineral access corridor map conversion	DGGS					*		
Scan BLM mineral information files	BLM							*
Scan USGS Alaska Bulletins, Maps, PP, & Legacy Files	DGGS							*

\* Completed or scheduled for completion with funding through the indicated fiscal year

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#### <sup>1</sup> Project lead agencies

ARLIS – Alaska Resources Library and Information Services

- BLM U.S. Bureau of Land Management
- DGGS Alaska Division of Geological & Geophysical Surveys
- USFS U.S. Forest Service
- USGS U.S. Geological Survey

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Tasks	Project Lead <sup>1</sup>	FFY02 USGS Actual	FFY02 USBLM Actual	FFY02 Status	FFY03 USGS Actual	FFY03 Status	FFY04 USGS Actual	FFY04 Status
DATABASES								
a) Geochemistry Data		175	400		100	*		
Non-rock GX sample data (USGS)	USGS					*		
Major/Minor oxides (USGS)	USGS					*		
Major/Minor oxides (DGGS)	DGGS					*		
USGS rock geochemistry	USGS					*		
USBLM geochemistry	BLM					*		
b) Mineral deposits and occurrences (USGS-Alaska Resource Data Files) & AMIS	USGS BLM	50	100		270		120	*
INTERAGENCY MINERAL	INFORM	ATION DE	LIVERY SY	STEM				
a) USGS/BLM Alaska Minerals Information Delivery System (MIDS)		300					400	*
Analysis, design, interagency portal	USGS							*
DGGS coordination	DGGS							*
b) DGGS Alaska Minerals Information Delivery System		400			350		330	*
Analysis, design, core system	DGGS							*
Data loading, applications	DGGS							*
Interagency database applications	DGGS							*

\* Completed or scheduled for completion with funding through the indicated fiscal year

Continued

### <sup>1</sup> Project lead agencies

ARLIS - Alaska Resources Library and Information Services

BLM – U.S. Bureau of Land Management

DGGS – Alaska Division of Geological & Geophysical Surveys

USFS - U.S. Forest Service

USGS – U.S. Geological Survey

Tasks	Project Lead <sup>1</sup>	FFY02 USGS Actual	FFY02 USBLM Actual	FFY02 Status	FFY03 USGS Actual	FFY03 Status	FFY04 USGS Actual	FFY04 Status		
c) Alaska minerals information portal interface & public applications	LRIS		300		475		300	*		
d) USGS-USBLM-DGGS bibliography	ALL	50	40					*		
e) Geochronology database for mineral terranes	DGGS	55						*		
f) Macro-fossil database for mineral terranes	DGGS	75						*		
g) Interagency Alaska mineral district data update, final report & operations plan	ALL						120	*		
PRESERVATION OF PHYSICAL MATERIALS										
a) Geologic Materials Center - compliance upgrade of facilities	DGGS							*		
b) Geologic Materials Center- database conversion to access & update	DGGS							*		
c) Geologic Materials Center- mineral sample inventory	DGGS		60					*		
d) Catalogue USGS rock samples moved up from Menlo Park	USGS							*		
e) GMC interagency mineral sample storage & retrieval database system	DGGS						200	*		
TOTAL		1,525	1,775		1,500		1,500			

\* Completed or scheduled for completion with funding through the indicated fiscal year

## <sup>1</sup> Project lead agencies

ARLIS – Alaska Resources Library and Information Services

BLM – U.S. Bureau of Land Management DGGS – Alaska Division of Geological & Geophysical Surveys

USFS – U.S. Forest Service

USGS – U.S. Geological Survey

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*Cover photo: Abandoned Jack Wade No. 1 gold dredge near mile 86 of the Taylor Highway. Photo by Karen Clautice.*