

Preliminary Publications Book 1 from Project on Mineral Resources, Metallogenesis, and Tectonics of Northeast Asia

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Preliminary Publications Book 1 From Project On Mineral Deposits, Metallogenesis, and Tectonics of Northeast Asia

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INTRODUCTION

This document describes the digital files on this CD-ROM report that consists of preliminary data tables, maps, and interpretative articles compiled in late 1997 and early 1998 for a new project on the *Mineral Resources, Metallogenesis, and Tectonics of Northeast Asia (Eastern and Southern Siberia, Mongolia, Northeastern China, South Korea, and Japan)*. The CD-ROM report is for sale by U.S. Geological Survey, Information Services, ESIC Open-File Reports, PO Box 25286, Denver, CO 80225 (Telephone 888-ASK-USGS).

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This publication contains the following maps, articles, and tables.

Part 1. Preliminary Mineral Deposit Tables, Preliminary Descriptions of Mineral Deposit Types, and Preliminary Descriptions of Metallogenic Belts

- Preliminary Table of Lode and Occurrences of Altay-Sayan Region and Adjacent Areas, Eastern Siberia, Russi, by Alexander A. Obolenskiy, Elimir G. Distanov, and Vitaliy I. Sotnikov (United Institute of Geology, Geophysics, and Mineralogy, Russian Academy of Sciences, Novosibirsk, Russia)
- Summary of Pre-Accretionary and Accretionary Metallogenic Belts of Mongolia, by Gunchin Dejidmaa and Gombosuren Badarch (Institute of Geology and Mineral Resources, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia)
- Preliminary Table of Lode and Placer Deposits and Occurrences of Mongolia, by Gunchin Dejidmaa, Gombosuren Badarch, Noosoi Chimed, and Dangindorjiin Dorjgotov (Institute of Geology and Mineral Resources, Mongolian Academy of Sciences, Ulaanbaatar), and Ayurzana Gotovsuren (Monrud Company, Mineral Exploration and Mining Company, Ulaanbaatar, Mongolia)
- Preliminary Table of Placer Gold Deposits and Occurrences of Mongolia, by Gunchin Dejidmaa (Institute of Geology and Mineral Resources, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia)
- Preliminary Description of Mineral Deposit Models (Types) for Mongolia, by Gunchin Dejidmaa (Institute of Geology and Mineral Resources, Mongolian Academy of Sciences, Ulaanbaatar),

Dangindorjiin Dorjgotov (Institute of Geology and Mineral Resources, Mongolian Academy of Sciences, Ulaanbaatar), Ochir Gerel (Mongolian Technical University, Ulaanbaatar), Ayurzana Gotovsuren (Monrud Co, Ltd., Mineral Exploration and Mining Company), and Sodov Ariunbileg (Institute of Geology and Mineral Resources, Mongolian Academy of Sciences, Ulaanbaatar)

Part 2. Preliminary Terrane and Overlap Assemblage Maps and Related Articles

- Preliminary Geodynamic Map of Yakutia Region, Eastern Siberia by Leonid M. Parfenov (Yakutian Academy of Sciences, Yakutsk, Sakha Republic (Yakutia)), and Andrey V. Prokopiev, Alexey V. Deikunenko, Vladimir S. Oxman, Alexander P. Smelov, Vladimir F. Timofeev, Felix F. Tret'yakov, Alexander P. Zadgenizov (Institute of Geological Sciences, Russian Academy of Sciences, Yakutsk), and Valery A. Vernikovsky (United Institute of Geology, Geophysics, and Mineralogy, Russian Academy of Sciences Novosibirsk), 2 sheets, scale 1:5,000,000.
- Preliminary Terrane and Overlap Assemblage Map of Altay-Sayan Region, Southern Siberia, by Nikolai A. Berzin (United Institute of Geology, Geophysics, and Mineralogy, Russian Academy of Sciences, Novosibirsk), 1 sheet, scale 1:5,000,000.
- Preliminary Terrane and Overlap Assemblage Map of Trans-Baikal and Eastern Sayan Region by Ivan V. Gordienko and Alexander N. Bulgatov (Buryat Institute of Geology, Russian Academy of Sciences, Ulan-Ude), 1 sheet, scale 1:5,000,000.
- Preliminary Terrane and Overlap Assemblage Map of Russian Southeast Region, by Alexander I. Khanchuk (Far East Geological Institute, Russian Academy of Sciences, Vladivostok) and Ludmila I. Popeko (Institute of Tectonics and Geophysics, Russian Academy of Sciences, Khabarovsk), 1 sheet, scale 1:5,000,000.
- Terrane Map of Northeast Asia: Principles of Compilation and Major Subdivisions of the Legend, by Leonid M. Parfenov (Institute of Geological Sciences, Siberian Branch, Russian Academy of Sciences, and Academy of Sciences of the Sakha Republic (Yakutia), Yakutsk), Alexander I. Khanchuk (Far East Geological Institute, Russian

Academy of Sciences, Vladivostok, Russia), and Warren J. Nokleberg (U.S. Geological Survey, Menlo Park, California, USA).

Terranes, Synaccretionary, and Postaccretionary Complexes of the Transbaikalia and Southeastern part of Eastern Sayn Regions, Siberia, by A.N. Bulgatov and I.V. Gordienko (Geological Institute, Siberian Branch, the Russian Academy of Sciences, Ulan-Ude, Russia).

Part 3. Geographic Base Map

Geographic Base Map of Northeast Asia, by Robert J. Miller (U.S. Geological Survey, Menlo Park, California, USA), Richard D. Koch (U.S. Geological Survey, Menlo Park, California, USA), Warren J. Nokleberg (U.S. Geological Survey, Menlo Park, California, USA), Duk-Hwan Hwang (Korea Institute of Geology, Mining, and Materials, Taejon, South Korea), Masatsugu Ogasawara (Geological Survey of Japan, Tsukuba, Japan), Demberel Orolmaa (Institute of Geology and Mineral Resources, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia), Andrei V. Prokopiev (Institute of Geology, Russian Academy of Sciences, Yakutsk, Russia), Sadahisa Sudo (Geological Survey of Japan, Tsukuba, Japan), Valery A. Vernikovskiy (United Institute of Geology, Geophysics, and Mineralogy, Russian Academy of Sciences, Novosibirsk, Russia), and Mao Ye (Changchun University of Science and Technology, Changchun, China).

SYSTEM REQUIREMENTS

The data and text on this CD-ROM require either an IBM or compatible personal computer or a Macintosh or compatible computer. The PC should have a 486 or higher processor (Pentium or higher recommended), Microsoft(R) Windows(TM) 3.1 or higher (Windows 95 or higher or Windows NT recommended and needed to use Acrobat Reader 4 and view GEOGMAP1.PDF), 32 megabytes RAM (64 MB recommended), a VGA or SVGA color monitor that can display 256 colors, and a CD-ROM drive. The Macintosh should have a 68020 or higher processor (PowerPC needed to use Acrobat Reader 4 and view GEOGMAP1.PDF), 8 megabytes RAM (16 MB recommended), Apple System Software version 7.0 or later (7.1.2 or later needed to use Acrobat Reader 4 and view GEOGMAP1.PDF), a 13-inch color monitor that can display 256 colors, and a CD-ROM drive.

On both platforms, you will need Adobe Acrobat Reader 3.0 or higher (3.01 and 4.0 included on this disc for Macintosh and Windows) or other software that can translate PDF files. If you are using

Acrobat Reader 3.01 or lower, you will need to upgrade in order to view GEOGMAP1.PDF.

PORTABLE DOCUMENT FORMAT (PDF) FILES

This CD-ROM contains Portable Document Format (PDF) files for viewing and searching documents. The Acrobat directory contains installers for Adobe Acrobat Reader 3.01 and 4.0 for both Windows (PC directory) and Macintosh (MAC directory). The installers are provided on this disc, or can be downloaded as the latest version of Adobe Acrobat Reader, free, via the Internet from the Adobe homepage on the World-Wide Web at <http://www.adobe.com/>. In order to view PDF files you will need a reader that can translate PDF files. This CD-ROM contains a full-text index (INDEX.PDX and associated files in the INDEX directory) that is for use in searching the PDF files for words or sets of words using the search tool in Acrobat Reader. Note, the search ability in Acrobat 4 was only available in the commercial ("pro") version at press time and will be available for Acrobat Reader 4.0 in the summer of 1999.

If you are using Acrobat Reader 3, you will be able to view all but the large shaded-relief-map PDF file (GEOGMAP1.PDF). That map is too complex for the older PDF reader and requires Acrobat Reader 4 which supports blended fills (such as used to show depth/height information on maps) which can simplify the file contents greatly.

Tip: If your copy of Acrobat Reader has "File" "Preferences" "General..." "Open Cross-Document Links In Same Window" selected, you should deselect it. This will keep the PDF documents open while you open and close other PDF files.

FILES ON CD-ROM AND DATA ORGANIZATION

At the root (base level) of this CD-ROM are the 1_README.TXT file and the documentation for this preliminary publication (OF99_165.DOC and OF99_165.PDF). The publications on the CD-ROM, including maps, tables and articles, are stored in the following directories under the indicated file names. Articles and tables are in Word 6 format (*.DOC). Plain-text files are in ASCII (*.TXT). Maps and figures are in Corel Draw 7 format (*.CDR), Adobe Illustrator format (*.AI), or Encapsulated PostScript format (*.EPS). All articles, tables, maps, and figures are in Adobe Acrobat Reader format (*.PDF).

Directory	File Names/Directory notes	Title of Map, Table, or Article
ACROBAT	Directories ACROBAT4 and ACROBAT3	Installation programs for Adobe Acrobat Reader 3.01 and 4.0 in MAC and PC directories
MINDEP	MINDEP1.*	Preliminary Table of Lode and Occurrences of Altay-Sayan Region and Adjacent Areas, Eastern Siberia, Russia
	MINDEP2.* MINDEP2A.* MINDEP2B.* MINDEP2C.*	Summary of Pre-Accretionary and Accretionary Metallogenic Belts of Mongolia, with figures 1, 2, and 3
	MINDEP3.*	Preliminary Table of Lode and Placer Deposits and Occurrences of Mongolia.
	MINDEP4.*	Preliminary Table of Placer Gold Deposits and Occurrences of Mongolia.
	MINDEP5.*	Preliminary Description of Mineral Deposit Models (Types) for Mongolia
TERMAP	TERMAP1A.* TERMAP1B.*	Preliminary Geodynamic Map of Yakutia Region, Eastern Siberia; Explanation (TERMAP1A.*) and Map (TERMAP1B.*)
	TERMAP2.*	Preliminary Terrane and Overlap Assemblage Map of Altay-Sayan Region, Southern Siberia
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	TERMAP5.* TERMAP5A.* TERMAP5B.*	Terrane Map of Northeast Asia: Principles of Compilation and Major Subdivisions of the Legend; Figure 1 - Project Areas (TERMAP5A.*), Figure 2 - Key Concepts of Terrane Analysis (TERMAP5B.*)
	TERMAP6.*	Terranes, Synaccretionary, and Postaccretionary Complexes of the Transbaikalia and Southeastern part of Eastern Sayn Regions, Siberia
GEOGBASE	GEOGMAP1.*	Geographic Base Map of Northeast Asia
	GEOGMAP2.*	Base Map Pamphlet
	GEOGMAP3.*	Base Map Readme files

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ASSOCIATED PROJECT

These materials are the results of work accomplished in the first part of a six-year project. The major scientific goals and benefits of the project are to: (1) provide a comprehensive international data base on the mineral resources of the region that is the first, extensive knowledge available in English; (2) provide major new interpretations of the origin and crustal evolution of mineralizing systems and their host rocks, thereby enabling enhanced, broad-scale tectonic reconstructions and interpretations; and (3) promote trade and scientific and technical exchanges between the North America and Northeast Asia. Data from the project are providing sound scientific data and interpretations for commercial firms, governmental agencies, universities, and individuals that are developing new ventures and studies in the project area, and for land-use planning studies that deal with both mineral potential issues. Northeast Asia has vast potential for known and undiscovered mineral deposits; however, little information existed in English in the West until publication of products from this project. Consequently, data and interpretations from the project are providing basic knowledge for major scientific, commercial, national, and international endeavours by other interested individuals and groups.

Customers and Collaborating Agencies

Customers for this and the prior include: (1) major mining, petroleum, environmental, construction, investment, and information companies, agencies, and organizations, (2) federal and state government agencies; (3) professional organizations; (4) earth science departments at universities; (5) news media; and (6) mineral resource, petroleum, and information company consultants. A major international customer is the Commerce Working Group of the Gore-Chernomyrdin Commission (GCC) chaired by Vice-President Gore (USA) and Premier Chernomyrdin (Russia).

The collaborating agencies for the project are the Russian Academy of Sciences, Mongolian Academy of Sciences, Mongolian Technical University, the Changchun University of Earth Sciences, China, Ministry of Geology of China, the Korean Institute of Geology, Mining, and Materials, the Geological Survey of Japan, and the U.S. Geological Survey. Other U.S.A. project participants are the Colorado School of Mines, University of Alaska Fairbanks, Stanford University, and the Northwest Mining Association, Spokane, Washington.

Study Area and Planned Products

The study area for the project consists of Eastern and Southern Siberia, Mongolia, Northeastern China, South Korea, and Japan (cover figure). The area is approximately bounded by 40° to 82° N. latitude and 80° to 146° E. longitude.

The planned products will include: (a) detailed mineral resource tables and location maps with data on about 2,000 lode deposits and several hundred placer districts, based on original, cited references; (b) regional terrane and overlap-assemblage maps and detailed explanations that will provide the geologic setting for mineral deposits and metallogenic belts; (c) metallogenic-belt, and resource- and environmental-concern maps and interpretations; and (d) metallogenic/tectonic interpretations, including a four-dimensional time-space model depicting the crustal origin and evolution of mineral deposits. Publications for the project will initially consist of, rapid preliminary reports, such as this report, of new and important regional geologic maps, map explanations, and general mineral resource tables and maps. Project publications will be released in both paper (USGS publications and scientific journals), digital (floppy disk, CD-ROM, GIS (ARC-View), and Internet/Web) formats. The various resource tables, maps, and interpretative materials will be authored by the international collaborators with the USGS project members serving as co-editors, and possibly as co-authors on some interpretative articles.

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Project Information and Publications Available on Internet/Web

Current project on Mineral Resources, Metallogenesis, and Tectonics of Northeast Asia (Eastern and Southern Siberia, Mongolia, Northeastern China, South Korea, and Japan)
<http://minerals.er.usgs.gov/wr/projects/minres.html>

Prior project on Mineral Deposits, Metallogenesis, and Tectonics of the Russian Far East, Alaska, and the Canadian Cordillera

Web Site for Project Description:
<http://minerals.er.usgs.gov/wr/projects/majdeps.html>
Web Site for Mineral Resource Data Base:
<http://wrgis.wr.usgs.gov/open-file/of96-513-b/>

Web Site for Terrane, Mineral Deposit, and Metallogenic Belt Maps:
<http://wrgis.wr.usgs.gov/open-file/of98-136/>

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