

**REPORT
ON
THE MINERAL EXPLORATION
IN
THE WESTERN ERDENET AREA
MONGOLIA**

(Phase I)

MARCH 2002

**JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN**

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PREFACE

In response to the request of the Government of the Mongolia, the Japanese Government decided to conduct a Mineral Exploration Project in the Western Erdenet Area and entrusted the project to the Japan International Cooperation Agency (JICA) and the Metal Mining Agency of Japan (MMAJ).

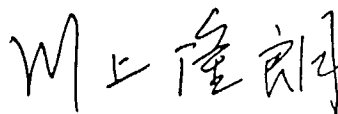
JICA and MMAJ sent to Mongolia a survey team composed by 3 members from July 2001 to September 2001.

The team exchanged views with the officials concerned of the Government of Mongolia and conducted a field survey in the Western Erdenet area. After the team returned to Japan, further studies were made and the present report has been prepared. This report includes the survey results of data compilation, geological survey and geophysical survey carried out until Phase I.

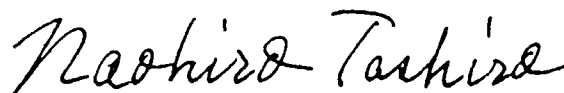
We wish to express our deep appreciation to the officials concerned of the Government of Mongolia for their close cooperation extended to the team.

March 2002

Takao Kawakami
President
Japan International Cooperation Agency

Handwritten signature of Takao Kawakami in black ink, consisting of stylized Japanese characters.

Naohiro Tashiro
President
Metal Mining Agency of Japan

Handwritten signature of Naohiro Tashiro in black ink, written in a cursive style.

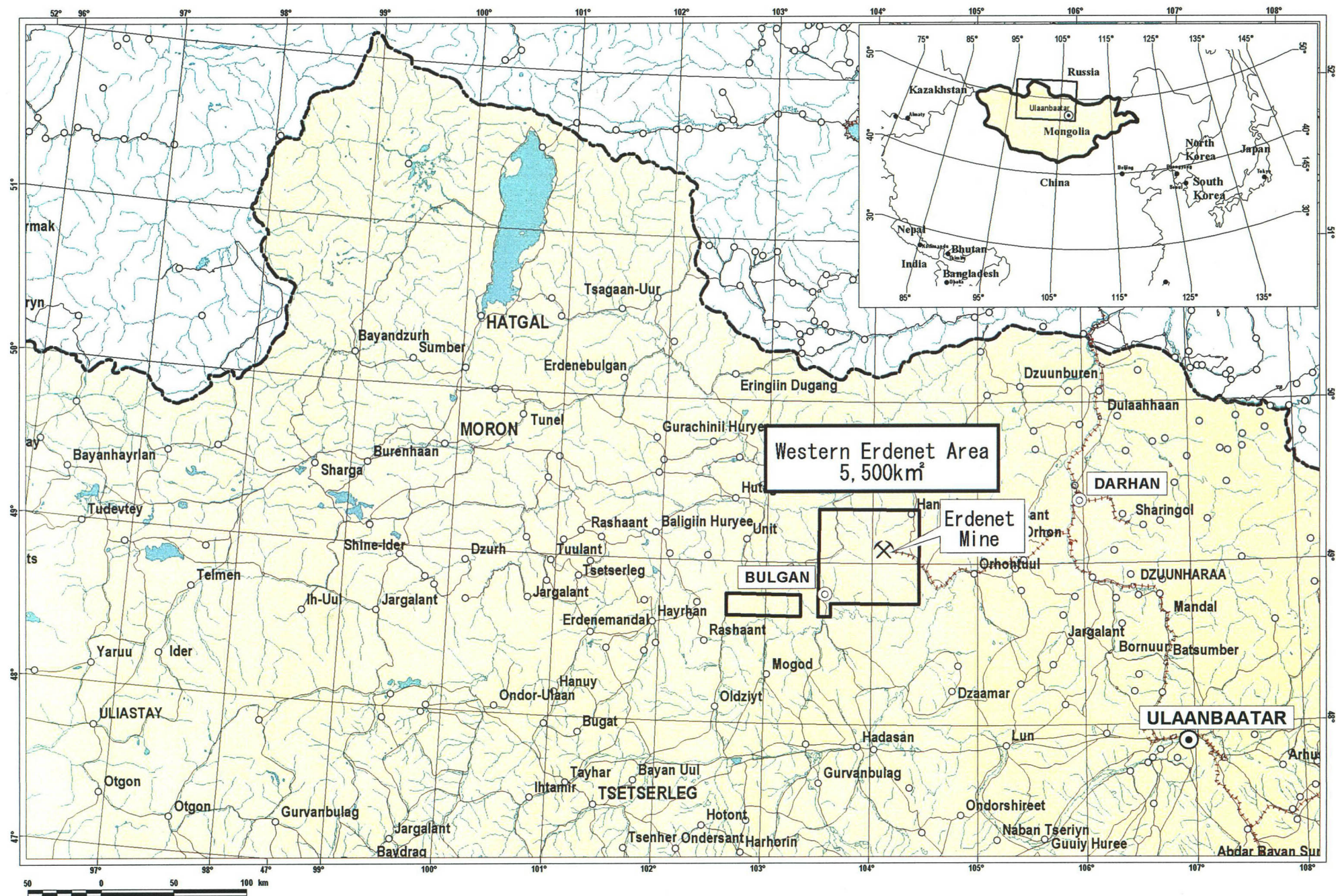


Fig. 1 Location map of the western Erdenet area in the central northern division on Mongolia.

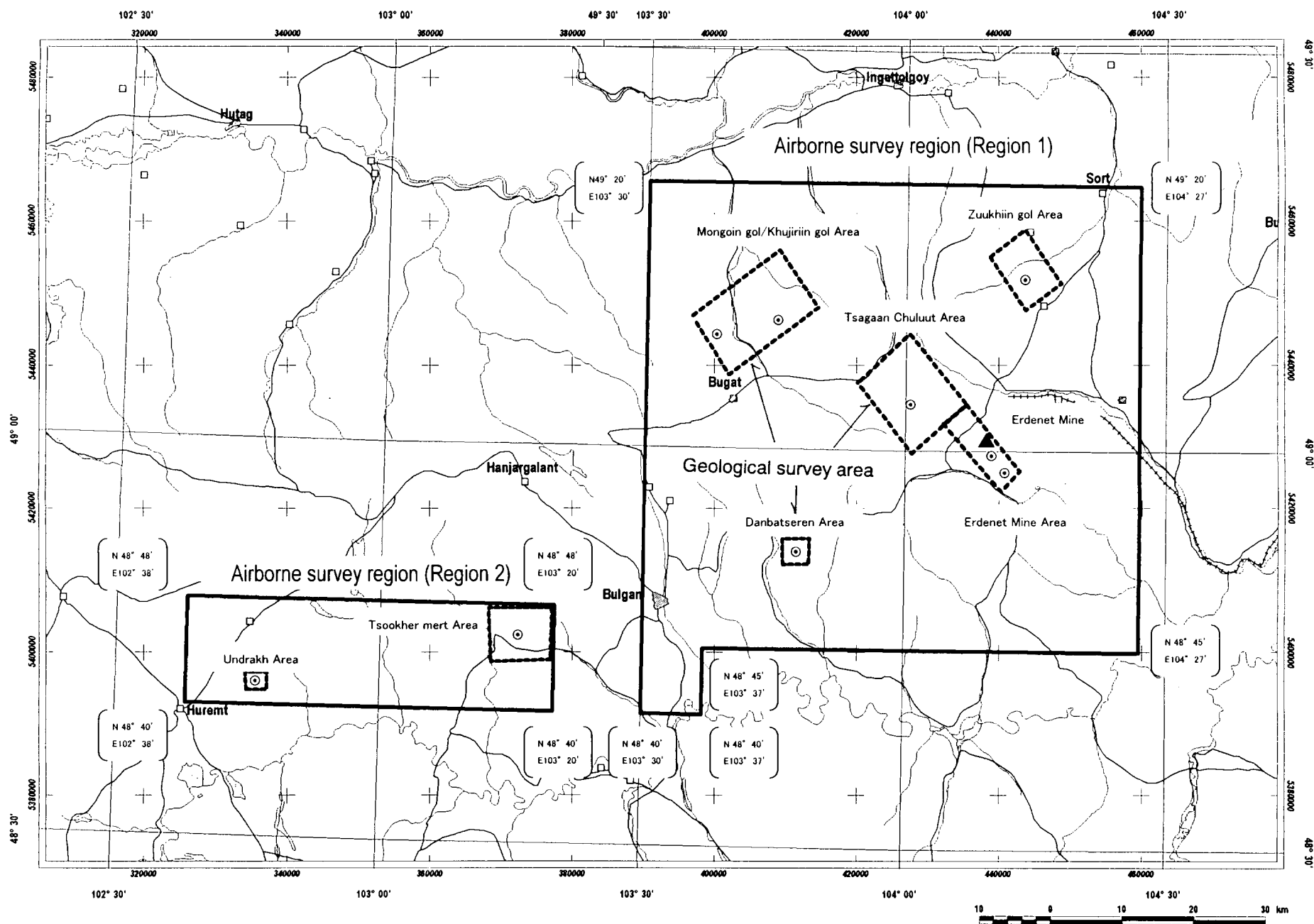


Fig. 2 Location map of the phase I survey areas in the western Erdenet Area.

ABSTRACT

In accordance with the Scope of Work signed on 18th May 2001 between the Governments of Japan and Mongolia, a mineral exploration project was carried out in Western Erdenet area, Mongolia in order to discover new ore deposits in the survey area.

This project started in 2001 with duration of three years. The present report describes the intermediate survey results of the first year (Phase I).

During this phase, geological survey and airborne geophysical survey were conducted within the project area that covered an extension of 5,500 km².

According to the results of the geophysical survey, the project area is located in the Tuva-Mongol Unit, southern part of the Vitim Structure running east-west direction as shown in Fig. I-4-3. Erdenet mine has occurred in the folding axis trending NW-SE direction as indicated by the low magnetic anomaly in the domain 3. Other three ore deposits are located in the southern wing of folding structure. The folding axis continues until Khujiriin gol mineral showing in the northwestern part of the project area. This axis continues also toward the southeastern part of the Erdenet mine, curving to north. According to the results of the detailed airborne survey analysis, it was recognized the existence and arrangement of a newly identified igneous body. Consequently, main important factors to be considered for the future exploration in the project are to investigate in more detail the continuity of the folding zones trending NW-SE and the distribution of the newly identified igneous body. The consideration of these factors is considered important to detect high potential areas for the existence of porphyry copper – molybdenum ore deposits.

In the NW-SE extension area of the folding axis indicated by the low magnetic anomaly, Khujiriin gol mineral showing exists as shown in Fig. I-5-2. The Khujiriin gol mineral showing presents the same alteration mineral assemblage as the Erdenet mine and high geochemical activity related to the formation of ore deposits. According to the statistical results of the rock geochemistry, the selected elements of Ag-Cd-Cu-(Mo)-Pb-W-Zn indicated that high factor scores are distributed in the mineral showing. The maximum values obtained from the ore assay in the Khujiriin gol mineral showing were Cu 11.13 %, Pb 5.78 %, Zn 2.64%, Mo 0.269%, Au 0.03 g/t and Ag 221 g/t. These values are high in ore grade.

On the other hand, the central mineral showing of the Zuukhiin gol area is located in the Domain 2. This mineral showing did not occur in the folding zone but in the cross points of the faults along EW and NW-SE directions and in a relative low magnetic anomaly. The alteration mineral assemblage and the geochemical activity in this mineral showing present the same characteristics as in the Erdenet mine area. The values obtained from the ore assay results are Cu 0.21 % to 0.46 % and Zn 0.013 % to 0.019 %. Maximum value obtained from the rock chemistry analysis is Cu 11,740 ppm. The alteration zone of the Tsagaan Chuluut area, which presents an advanced argillic alteration, is

located in the NW-SE folding axis extending from the Erdenet ore deposits. However, the ore grades in the alteration zone present low values and indicated low factor scores.

The southeastern Erdenet mine area in and around the NW-SE folding axis, the Khujiriin gol mineral showing area and the Zuukhiin gol central mineralized zone are selected as first priority potential areas because porphyry Co-Mo mineralization are expected to be found near the ground surface. The Tsagaan Chuluut alteration zone is selected as a secondary priority potential area because porphyry Co-Mo mineralization is expected in the deeper part from the ground surface.

Geological survey and geophysical survey are recommended for the first priority areas.

It is recommended to conduct geological survey, geophysical survey (IP electric survey) and drilling survey in the Khujiriin gol mineral showing and the Zuukhiin gol central mineral showing.

It is also recommended that reconnaissance and semi-detailed geological survey, similar as the ones conducted during the Phase I, be conducted in the areas selected by the results of the airborne geophysical survey.

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