

**REPORT ON THE MINERAL EXPLORATION
IN
THE EAST JAVA AREA
THE REPUBLIC OF INDONESIA
PHASE II**

MARCH 2003

METAL MINING AGENCY OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY

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PREFACE

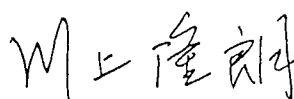
In response to the request by the Government of the Republic of Indonesia, the Japanese Government decided to conduct a mineral exploration project in the East Java Area and entrusted the survey to the Japan International Cooperation Agency (JICA). The JICA entrusted the project to Metal Mining Agency of Japan (MMAJ) because contents of the survey belong to a very specialized field of mineral exploration.

The survey conducted during this fiscal year is the second-phase of a three-phase project to be compiled in 2004. JICA and MMAJ sent survey teams to the Republic of Indonesia from 26 August to 13 November 2002 and 26 January to 28 February 2003. The team exchanged views with the officials concerned with the Government of the Republic of Indonesia and conducted a field survey in the East Java Area.

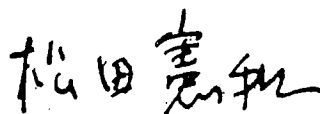
After the team returned to Japan, further studies were made and a report on the first phase of the mineral exploration project was prepared. We hope that this report will serve the development of the Republic of Indonesia and contribute to the promotion of friendly relations between our two countries.

We wish to express our deep appreciation to the officials concerned of the Government of the Republic of Indonesia for close cooperation extended to the Japanese team.

March 2003



Takao KAWAKAMI
President,
Japan International Cooperation Agency



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President,
Metal Mining Agency of Japan

SUMMARY

The second-year mineral development survey of East Java consisted of; analysis of existing data, regional geochemical survey, semi-detailed geochemical survey, and geological survey. The area covered by regional geochemical survey was 3,600km², that by semi-detailed geochemical survey 800km², and that by geological survey was 70km².

The geology of the survey area consists of Cretaceous metamorphic basement overlain by Tertiary and Quaternary volcanic and pyroclastic rocks and sedimentary rocks composed mainly of limestone. Mineralization comprises gold, silver, copper, lead, zinc, and manganese mineralization in mainly Oligocene to Miocene volcanic and pyroclastic rocks.

(1) Regional geochemical survey

Geochemical anomaly zones were extracted by regional survey consisting of stream sediment sampling, assay, and analysis. These anomalies were examined and integrated with surface mineral showings, geologic structures, and distribution of alteration minerals, and 12 districts were delineated as major prospects. In these districts, pyrite dissemination, occurrence of alteration minerals such as sericite and mixed-layer clays, quartz veins and associated gold, silver, copper, lead, zinc mineralization were recognized. From these mineral showings and geochemical anomalies, 6 districts, namely the following (a) to (f) were extracted as the targets for the next-step (geological survey, geochemical survey, etc.) survey. Also for 3 districts (g) to (i), we believe that the sources of the anomalies can be clarified by supplementary survey. Of the above, considering various factors including mining concessions, districts (a), (b), and (d) are concluded to be particularly promising.

- (a) Selogiri district: Selogiri deposit in the eastern margin of the western area and auriferous quartz veins in the vicinity.
- (b) Prambon district: Quartz veins (gold, silver anomalies) to the north of Trenggalek in the southwestern part of the eastern area of the district.
- (c) Sentul East district: Silicified zones to the southwest of Trenggalek.
- (d) Seweden district: Alteration zones associated with gold, copper mineralization to the south of Blitar in the central part of eastern area.
- (e) Purwodadi district: Copper, gold mineralized and altered zones to the southeast of Malang.
- (f) Tempursari district: Gold, copper mineralized and altered zones.
- (g) K. Jinggring district: Gold anomalous zones to the south of Tulungagung in the western part

of the eastern area.

- (h) Seweden East: geochemical anomalies, quartz veinlets, alteration zones near the Royal Indotama Concessions
- (i) Purwoharjo district (southeast of Malang): Copper anomaly zone continuing northeastward from the Purwodadi district.

(2) Semi-detailed geochemical survey

Semi-detailed geochemical survey was carried out in the area covered by regional survey during the first year of the project. The objective of the work was to increase the sampling density of stream sediments. At Lorok and Ponorogo South and other districts, gold, silver, copper, lead, zinc mineralization associated with quartz veins was found. And 5 districts of Lorok, Ponorogo South, Nawangan, Pacitan, and Purwoharjo were extracted after integrated analysis for next-step survey.

(3) Geological survey

The following 2 districts were selected for geological survey from those extracted as anomalous zones by geochemical regional and semi-detailed geochemical survey.

- (a) Prambon district: Northwestern part of the regional geochemical survey area of this year.
- (b) Ponorogo South district: Eastern part of the semi-detailed geochemical survey area of this year.

In both districts, quartz veins associated with copper and/or lead, zinc mineralization occur on the surface, and alteration zones containing silicified zones were developed in the vicinity. In Ponorogo South district, targets for drilling were extracted by soil geochemical survey. In Prambon district, the high gold value quartz veins were considered to be promising targets for drilling.

It is recommended for the third year, that drilling be carried out in the Ponorogo South and Prambon districts which were delineated by the present survey. Also it is recommended that detailed exploration including geological survey, geochemical survey, and geophysical survey be carried out effectively in the Selogiri, Seweden, Lorok, Pacitan, and Purwoharjo districts and mineral potential be evaluated, and then the necessity and effectiveness of drilling be determined.

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