

ABSTRACTS OF PAPERS

A case history - prospecting, evaluation and development of the Mamut Mine: Yoshio Akiyama, OMRD- Sabah Bhd., Mamut Mine, Sabah

The Mamut porphyry copper deposit is situated in north-western Sabah, about 68 kilometers east of Kota Kinabalu. It has been in operation for approximately seven and a half years and is currently producing 20,000 tonnes of ore averaging 0.57 % Cu and 25,000 tonnes of waste per day.

The history of exploration of the Mamut porphyry copper prospect might be traced back to 1958 when copper anomalies were discovered in the basalt and ultrabasic rocks in the Labuk Valley by Fitch (1958). During the period of 1963 to 1965, a systematic stream sediment survey, which led to the discovery of some anomalous areas around the present property, was conducted by the United Nations Labuk Valley project team. In 1966, the Geological Survey of Malaysia implemented the subsequent reconnaissance programme at the present ore deposit, which involved mapping, geochemical soil surveys, shallow diamond drilling and pitting so as to make a preliminary assessment of the Mamut ore deposit. Following an investigation by the Geological Survey the Overseas Mineral Resources Development Company of Japan conducted an exploration programme in the Mamut area during the period of 1968 to 1969. The exploration programme was carried out through the stages of general appraisal by surface geological mapping, geophysical surveys, geochemical soil and stream sediment surveys and aeromagnetic surveys covering the area of prospecting license to a detailed investigation by diamond drilling and underground exploratory tunnelling in the mineralized area. The mine was put into operation in 1975 after the completion of a feasibility study on the basis of the results of exploration.

An experience obtained through a series of various exploration programmes, which led to the discovery and subsequent development of the Mamut Mine, has shown the system of reconnaissance geochemical survey by stream sediments followed by detailed grid soil sampling proved to be a successful exploration method in this region. Grid drilling and subsequent development of the mine revealed the ore deposit to coincide with the most intense anomalous area of both geochemical (soil) and geophysical (IP) surveys. The ore deposit lies approximately within the range above 300 ppm of soil copper content and 10% of Frequency Effect.
