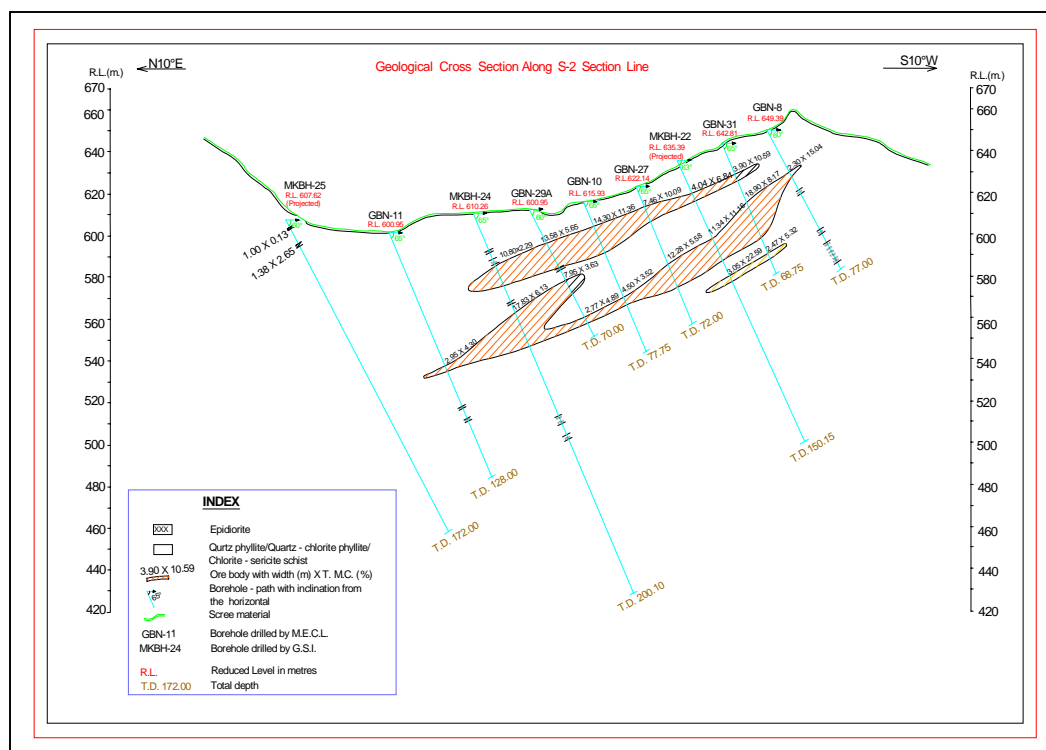


GEOLOGICAL REPORT ON EXPLORATION FOR LEAD-ZINC ORE

GORUBATHAN (MAL KHOLA) BLOCK

DISTRICT- DARJEELING, WEST BENGAL

EXECUTIVE SUMMARY



MINERAL EXPLORATION CORPORATION LIMITED
(A Government of India Enterprise)
 SEMINARY HILLS, NAGPUR
 KOLKATA AREA
 KOLKATA, WEST BENGAL (INDIA)

SEPTEMBER-1985

GEOLOGICAL REPORT ON EXPLORATION FOR LEAD-ZINC ORE IN GORUBATHAN (MAL KHOLA BLOCK) DARJEELING - DISTRICT, WEST BENGAL

EXECUTIVE SUMMARY

1.0 LOCATION

The Mal Khola block of the Gorubathan base metal deposit is situated in the Himalayan foot hills at a plan distance of about 7 km north-east of Gorubathan (Sombari Hat), ($26^{\circ} 58'00''$: $88^{\circ} 43'00''$; toposheet No-78 B/9). The deposit is approachable from Gorubathan by 9 km long road with its first 2 km being black topped road and the remaining 7 kms an unmetalled hill road. There is a branch post office at Gorubathan. and telegraph facility is available at Sylihat at a distance of about 7 kms.

The nearest railway station is New Mal on the New Jalpaiguri- New Bongaigaon broad gauge section of North East frontier Railway.

2.0 GEOLOGY AND STRUCTURE

The rock types of the Mal Khola Block are quartz-chlorite-biotite-sericite schist, quartzite, epidiorite and quartz magnetite rock. These litho-units belong to the Gorubathan sub-Group of the Daling Group and are of Precambrian age. The over all strike of the formations is E-W northerly dips varying form 20° to 45° . There are local swings at places, which change the strike to almost north-south direction. Occasionally boudins, varying in length from 1m to 3m are also seen. The lead-zinc mineralisation in the form of galena and sphalerite occurs mainly in association with the quartz magnetite rock.

3.0 MINERALISATION

The lead-zinc mineralisation in the form of galena and sphalerite occurs mainly in association with the quartz magnetite rock. Outcrops of ore body are seen in the area in addition to the boulders of float ore found scattered at places. The quartz

magnetite rocks exhibit crude bedding and at places intricate folding. Often ore bodies exhibit ill defined layering of ore minerals.

The main ore forming minerals, in order of abundance, are magnetite, pyrite, sphalerite, and galena. They form about 90% of the total volume of the ore minerals. The remaining 10% is accounted by pyrrhotite, chalcopyrite, arsenopyrite and other minerals. The deleterious elements like bismuth and arsenic are not present in significant quantities. Gold has been found in the range of nil to 1 gm/t in the composite samples. Similarly the silver values in the composite samples have been found to vary from 7 to 115 gm/t. The silver values appear to be significant and could perhaps be recovered as a by-product

4.0 QUANTUM OF WORK DONE

MECL has carried out detailed Geological Mapping & topographical survey covering 0.96Sq. Km area. 2720.65 m of drilling in 32 boreholes, 1093 number of primary and check samples for gold, 43 Nos of composite samples are analysed for Au & Ag and also for 5 radicals. 61 Nos.of samples for Spectroscopic studies, 21 samples for Petrographic studies of thin sections and 29 samples for polished sections and 1 No.of sample for beneficiation study.

5.0 ORE RESERVE ESTIMATION

Reserves of 1.79 m.t. of 3.86% Pb and 3.64% Zn (TMC- 7.50% Pb+Zn) have been estimated in the Mal Khola block within a vertical depth of 125m and a strike length of 200m. These reserves have been put under "Probable" category.

As a result of the Detailed exploration carried out by MEC has helped fairly well in delineation of the shape and size of the ore body has been delineated. Although the grade of 7.50% Pb + Zn is quite attractive, the reserves of 1.79 m.t. are limited.

The deposit has been classified as Category "D" of UNFC 332

The total cost of exploration is Rs. 32.32 Lakhs

GEOLOGICAL CROSS SECTION

Geological Cross Section Along S-2 Section Line

