

GEOLOGICAL REPORT ON EXPLORATION FOR LEAD-ZINC ORE IN SINDESAR KALAN DEPOSIT UDAIPUR DISTRICT, RAJASTHAN

EXECUTIVE SUMMARY

1.0 LOCATION

The Sindesar Kalan Block is located at latitude 25⁰11' and longitude 74⁰09' which is covered in the Toposheet No. 45L/1 of Survey of India.

2.0 GEOLOGY AND STRUCTURE

The rock formations of the area, as per GSI, belong to the Rajpura - Dariba Group, which in turn forms a part of the Bhilwara Super Group. The Bhilwara Super Group, earlier known as the Pre-Aravalli Group, is of Archaean age and represents the Bhilwara Geological Cycle (>2,500 million years). The rock formations of the area have been subjected to more than one phase of deformation. They have been metamorphosed to amphibolites facies. In the Sindesar Kalan Block proper, a succession of dolomite, carbonaceous/graphitic mica schist (garnet and Staurolite bearing), quartz mica schist (with quartzite intercalations), siliceous dolomite and biotite quartz schist is observed. The general strike of the formations varies from N – S to N 20° E – S 20° W, with dips varying from 60° to 75° towards east.

3.0 MINERALISATION

The carbonaceous / graphitic mica schist is the main host rock for the lead-zinc materialization. The zone of oxidation varies from 20 to 40, m depth from the ground level. The primary sulphide mineralisation starts abruptly below the zone of oxidation, without any conspicuous zone of secondary enrichment. The mineralisation is found in the form of sphalerite as Zn ore mineral, while galena is the lead bearing ore mineral.

4.0 QUANTUM OF WORK DONE

MECL has carried out detailed Geological Mapping & Topographical survey as per requirement, 9015.65 of drilling in 33 boreholes, 5772 Nos of primary and check

(Internal-226, External-20 and Duplicate half-200) samples for Pb, Zn were analysed. 29 nos of composite samples are analysed for Au & Ag and 39 nos of samples are analysed for complete rock analysis. Petrographic studies on 50 Nos. of samples for polish section and 23 nos for thin section test were also carried out by MECL in the Block. MECL. A bulk sample of 300 kg was prepared from the available cores of the boreholes drilled, both by GSI and MECL and IBM carries out the study. Based on the above data and earlier data of GSI, an exploration report was submitted by Based on the above data and earlier data of GSI, an exploration report was submitted by MECL.

5.0 ORE RESERVE ESTIMATION

The ore zones have been demarcated on 2% TMC cut-off. Some comparatively richer zones have also been delineated on 3% TMC cut-off.

Out of the four zones demarcated on 2% TMC cut-off, Ore zone – I is the most persistent and extends over the entire strike length of the deposit. The other zones have a limited strike and depth persistence.

The reserves have been estimated under two categories, namely 'Probable' and 'Possible'. On 2% TMC cut-off the total ore reserves comes to 93.75 million tones with 2.68% TMC (2.09% Zn and 0.59% Pb). 77.78 million tones of these reserves are of 'Probable' category.

These reserves have been estimated upto 225 m RL i.e. upto 275 m vertical depth from the ground level. The ore body has however, been found to extend upto 60 m RL in none of the sections.

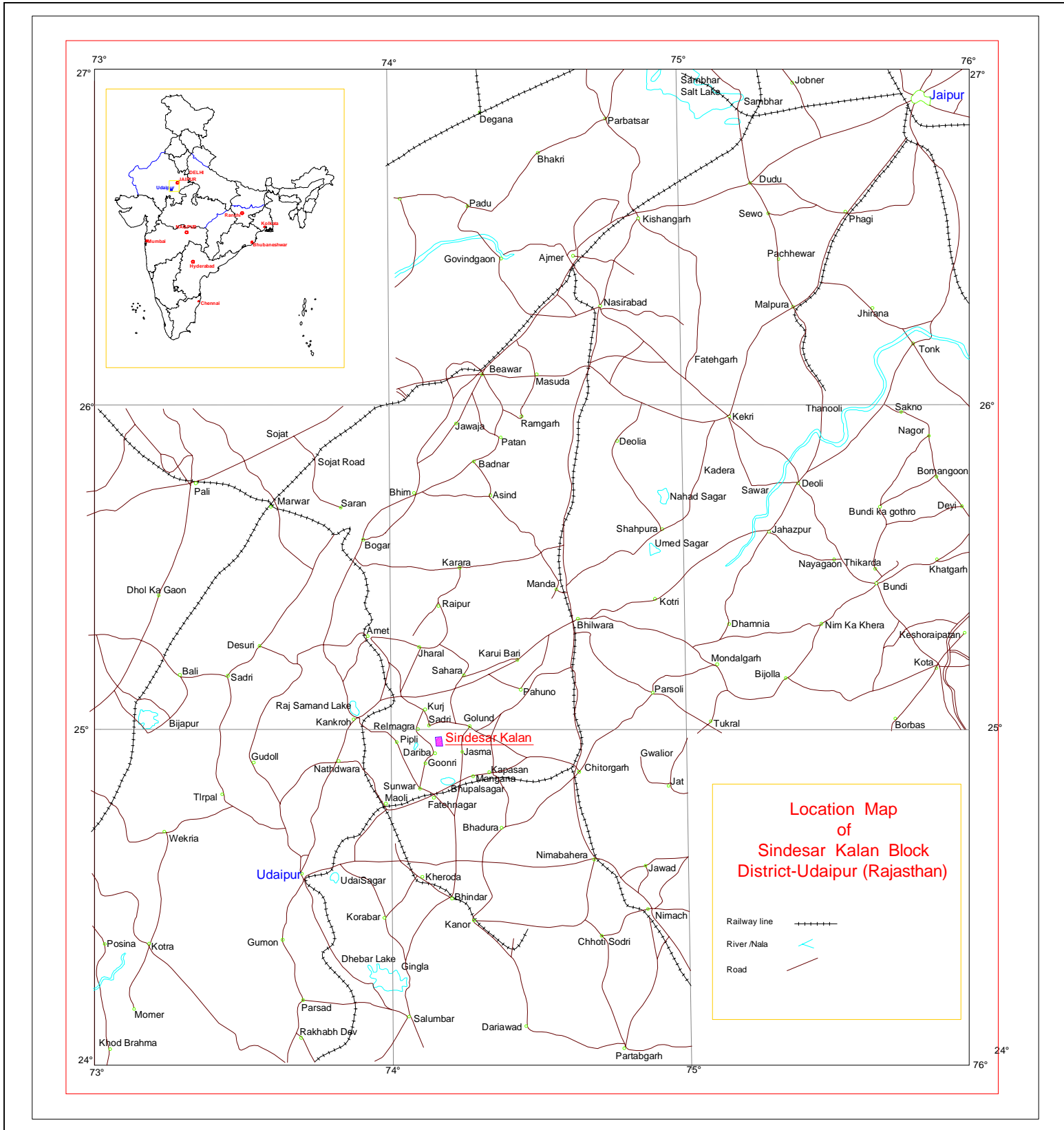
The reserves on 3% TMC cut-off, upto 225mRL are of the order of 27.42 million tonnes of 3.56% TMC (2.75% Zn and 0.81% Pb). Of these 22.68 million tones fall in 'Probable' category.

Beneficiation studies were carried out by the IBM on a bulk sample prepared from the borehole cores of GSI and MEC boreholes. The study indicates that due to the nature of interlocking between the minerals, the liberation is inadequate even at 200 mesh.. The zinc concentrate grade meets the requirements of the HZL zinc smelter and the recovery is also satisfactory.

The deposit has been classified as Category “D” of UNFC 332

The total Cost of Exploration is Rs. 80.70 Lakhs

LOCATION MAP OF SINDESAR KALAN BLOCK



GEOLOGICAL CROSS SECTIONS

