

**GEOLOGICAL REPORT ON  
EXPLORATION FOR  
GOLD IN  
BHUKIA (EAST) BLOCK**

**DISTRICT- BANSWARA, RAJASTHAN**

**EXECUTIVE SUMMARY**



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# **GEOLOGICAL REPORT ON EXPLORATION FOR GOLD IN BHUKIA (EAST) BLOCK, DISTRICT- BANSWARA, RAJASTHAN.**

## **EXECUTIVE SUMMARY**

### **1.0 LOCATION**

The prospect is located 13 km northwest of Tahsil head quarter Ghatol. Bhukia East block falls in the Survey of India toposheet No. 46 I/5 and is bounded by Latitudes 23°50'12": 23°50'39" and Longitudes 74°21'54": 74°22'19". It is well connected with district Head quarter Banswara (42 km south) Udaipur (150 km northwest) and Chittorgarh (157 km northwest) by all weather metalled roads.

### **2.0 GEOLOGY AND STRUCTURE**

The litho units together constitute a part of Delwara Group of Aravalli Supergroup. The major litho units exposed in the area in order of ascending disposition are Dolomitic marble, muscovite-biotite-quartz schist, Keratophyre, quartzite and amphibolite/metapyroxenite. Pegmatites of variable shape and size, intrude the above litho assemblage at many places in the block. The litho assemblage is underlain by a thick pile of staurolite-garnet mica schist to the east of the block area, which represents a tectonic sliver of the Banded Gneissic complex (Bhattacharyya and Nagarajan, 1994). The Staurolite-garnet mica schist shows prograde metamorphism in amphibolite facies and subsequent retrogression.

The rocks of the Aravalli Supergroup have undergone three phases of folding. Major shear zone in the form of lineament, viz. Delwara lineament, passes along the eastern margin of Aravalli basin and is located approximately to 10 km east of the study area.

### **3.0 MINERALISATION**

The massive-semi massive to disseminated sulphide mineralisation comprises pyrrhotite, arsenopyrite, pyrite and chalcopyrite in order of decreasing abundance. The veins & veinlets of the sulphides occur as simple 1 to 5 cm in thickness to sub-parallel network of veinlets either filling dilatant fracture or replacing the sheared/bracciated host rocks. The Criss-Crossing fractures/shears together give rise to stock work pattern of mineralisation. In the majority of the boreholes, mineralisation occurs in Keratophyre, Amphibolite / metapyroxenite, dolomitic marble, quartzite in the order of decreasing abundance. The shears parallel to the axial plane of F2 folds control the mineralisation.

Gold occurs as a native metal in arsenopyrite, lovingite. However, the occurrence of native gold has also been recorded rarely within pyrrhotite. Besides, the sulphide hosted native gold; its presence in the alteration zones without sulphides is of great economic significance.

#### **4.0 QUANTUM OF WORK DONE**

MECL has carried out detailed Geological Mapping & topographical survey covering 0.50 Sq. Km area. 2856.70 Mtrs of drilling in 9 boreholes, 1923 (1862+61) number of primary and check samples, Duplicate half core samples for gold by fire assay 85 Nos with 35 Nos Check samples were analysed. 216 Primary samples are also analysed for Cu. 58 Nos of composite samples are analysed for Au & Ag by Fire Assay method, for Pb, Zn, Cu, Ni & Co. 30 Nos.of samples for Emission Spectroscopy and 15 Nos.of samples for XRD studies, Petrographic studies on 40 Nos.of samples and Minerographic studies on 40 Nos of samples and 30 Nos of specific gravity determination test along with 1 Ore beneficiation study and Base line Environmental studies were also carried out by MECL in the Block. Based on the above data and earlier data of GSI, an exploration report was submitted by MECL.

#### **5.0 ORE RESERVE ESTIMATION**

There are five major lodes (L-1 to L-5) identified in the present demarcated boundary of Bhukia East Block. The reserves have been estimated up to oxidized/weathered zone only. These lodes show average true width vary from 3.68 m (L-5B) to 14.04m (L-4C) at 1.00 g/t Au cut-off.

The reserves in probable category are 4.345 million tonnes with grade 2.331 g/t Au at 1.00 g/t Au cut-off The reserves in possible category are 7.396 million tonnes with grade of 2.609 g/t. The total reserves being 11.741 million tones, with grade 2.508 g/t Au.

Lodes are open at depth and very well coincide with number of old working at the surface showing the up dip and down dip continuity.

**The ore is amenable to Beneficiation as reported by Indian Bureau of Mines.**

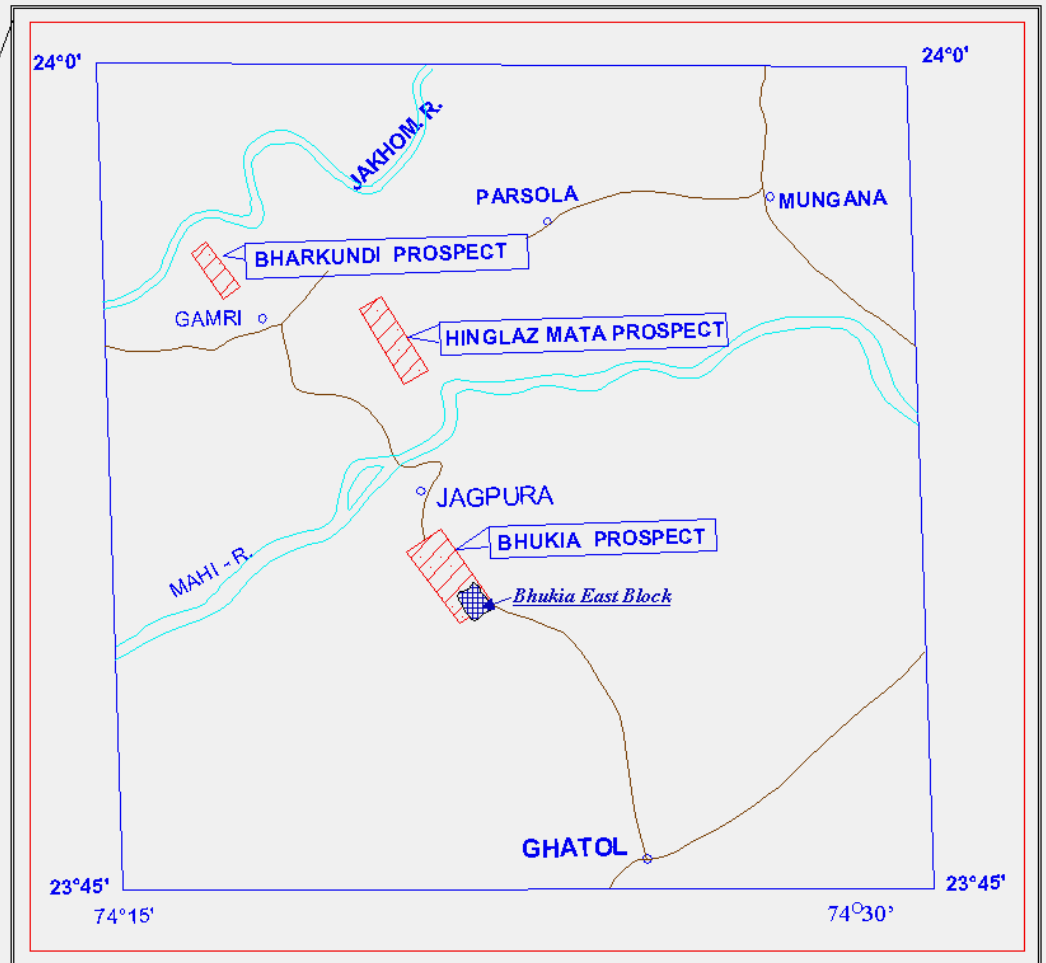
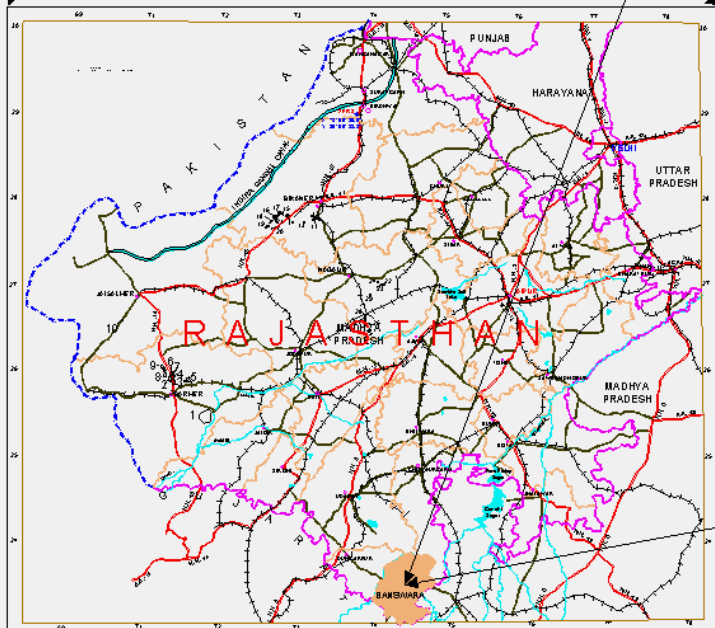
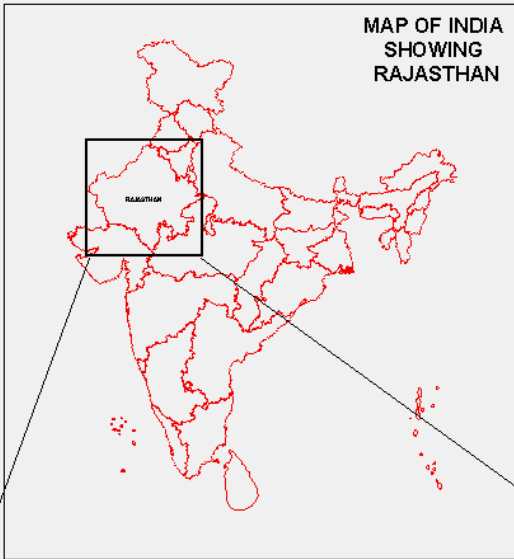
**The Deposit has been classified as Category 'B' of UNFC 332.**

The studies on the baseline data of Environmental studies covering land use / land cover pattern studies have been carried out in the block.

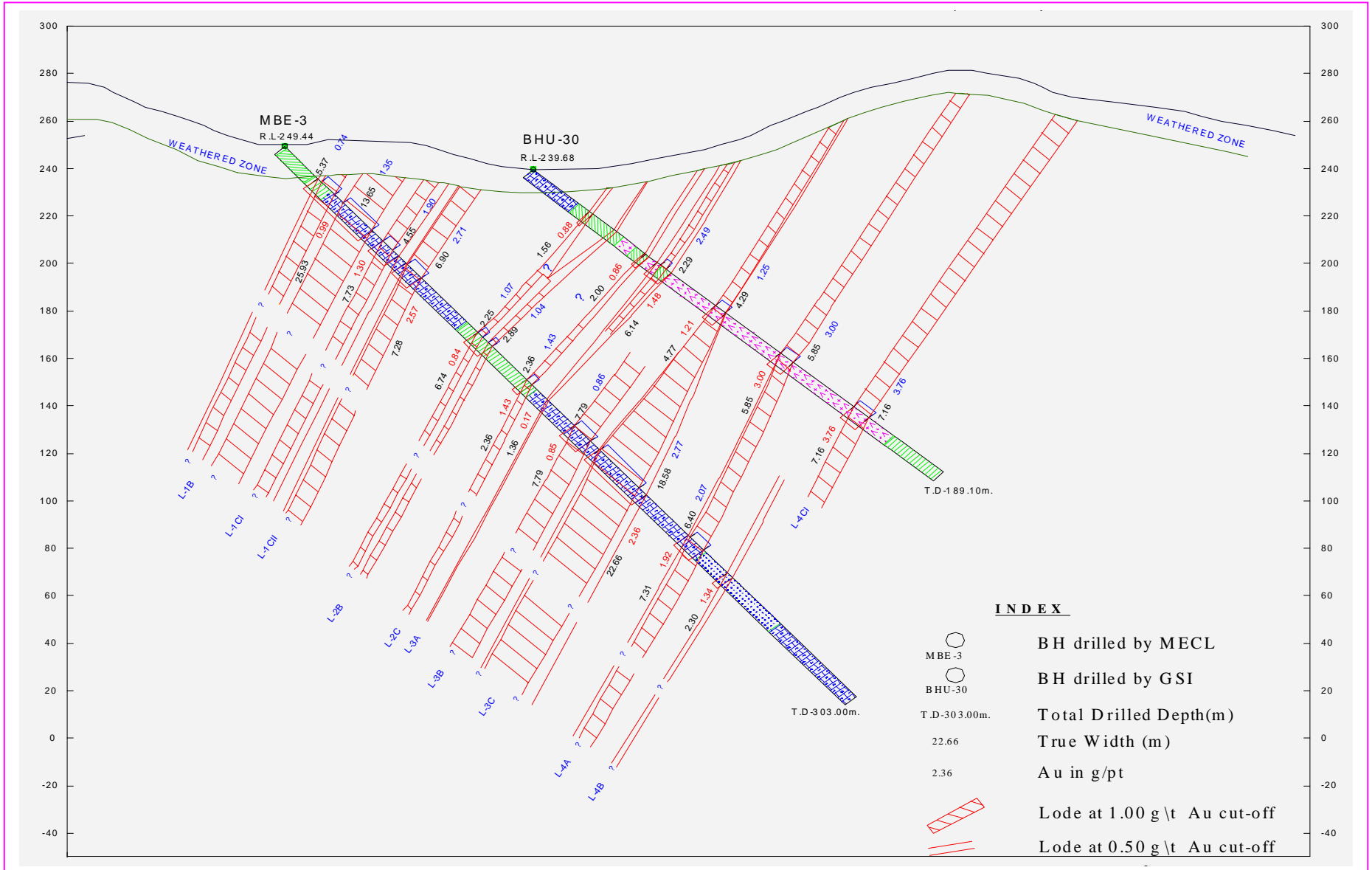
**The Total Cost of Exploration is Rs. 216.32 Lakhs.**

**LOCATION MAP OF BHUKIA (EAST) BLOCK, BHUKIA GOLD PROSPECT**  
**DISTRICT : BANSWARA, RAJASTHAN**

MAP OF INDIA  
SHOWING  
RAJASTHAN



# Geological Cross Section



# Level Plan at 180 mRL

