

**GEOLOGICAL REPORT ON  
DETAILED EXPLORATION FOR  
COPPER ORE IN  
DHOBANI MINE AREA  
DISTRICT- EAST SINGHBHUM, JHARKHAND**

**EXECUTIVE SUMMARY**



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EASTERN ZONE  
TUPUDANA, RANCHI, JHARKHAND**

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## **EXECUTIVE SUMMARY**

### **1.0 LOCATION**

The Dhobani Mine Area is located at about 1.0 Km west of Mossabani Mine and 2.5- 2.75 km SSW of Pathergora Mines of HCL in the East Singhbhum district of Jharkhand State. The Dhobani village located at latitude N22°31' and longitude E86°27'(Toposheet No. 73 J/6) ; it is about 15 km from Ghatsila, the nearest railhead on Howrah-Mumbai broad guage section of SE railway. Jamshedpur the steel city is 70km from the exploration Block with all the infrastructure houses in it, would cater as the service provider. The smelter plant of HCL is located at Maubhandar, which is nearest to Ghatsila.

### **2.0 GEOLOGY AND STRUCTURE**

The Dhobani Mine Area lies at southern part of the famous Singhbhum shear zone, which is the major lineament that holds number of both copper deposits as well as mines. Besides copper, the shear zone is the repository of rich deposits of Gold, Uranium, Magnetite and Apatite. The area is occupied by Precambian metamorphites belonging to the Dhanjori Group, represented by metabasics and its metamorphed variants. The regional strike of foliation (S2) varies between N14°W-S14°E and N25°W-S25°E with 40°-50° easterly dip.

The various rock units mapped on the surface and as encountered in boreholes during exploratory drilling are the host rock Chlorite Schist, Chlorite quartz Mica Schist, Quartz Chlorite Mica Schist, Quartz Mica Schist, Quartzites, Fault Breccias and Laterite. The rocks formation of the block generally trends N15°-25°W – S15°-25°E with 55°-65° northeasterly dip.

Three set of joints are predominantly developed viz. N10°E-S10°W, N30°-40°E-S30°-40°W and N50°W-S50°E with dipping of 75° easterly 60° easterly and gentle north easterly respectively. One striking fault has been encountered in the borehole MDB-20 between 51.40m-58.40m.

### **3.0 MINERALISATION**

The host rock for copper mineralisation is moderately sheared either Quartz Chlorite Biotite Schist or Chlorite Quartz Biotite Schist. The mineralisation is manifested generally in the form of Sulphides. The ore-bearing mineral in the order of predominance is Chalcopyrite, Pyrite, Pyrrohotite as well as Bornite and Azurite.

The mineralisation most predominantly occurs in the form of disseminations, streaks and stringers that are parallel to foliation as well as blebs and clots at times. The depth of oxidation varies between 18.0m and 48.0m.

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

MECL has carried out detailed Geological Mapping & Topographical survey covering 1.25 Sq.km. area, 4000.25 Mtrs of drilling in 20 boreholes, 1990 Nos number of primary and check samples, 40 Nos of composite samples for (For Cu, Ni, Co, Mo & Cd) & 40 number composite samples Fire Assay for Au & Ag were also analysed. 40 Nos. of composite samples for Emission Spectroscopy (14 radicals) and 20 for XRD studies, Petrographic studies on 40 Nos.of samples and Minerographic studies on 40 Nos of samples and 50 Nos of specific gravity determination test were also carried out by MECL in the Block. One bulk sample, drawn from other half core of boreholes pertaining to FW, Lode A, HW-I and HW-II weighing of about 180 Kg with average assay of 0.95% Cu have been sent to IBM Modern Ore dressing Laboratory, Nagpur for ore beneficiation studies. The metallurgical results obtained are quite encouraging as the ore is amenable to beneficiation. Based on the above data and earlier data of GSI, an exploration report was submitted by MECL.

#### **6.0 ORE RESERVE ESTIMATION**

The ore zones have been deciphered at 0.20% Cu and 0.50% Cu assay cut-off. Lodes, thus correlated due its distribution over space and time have been designated as FW-I, A, HW-I and HW-II besides HW-III IV, V, VI, VII, VIII, IX and X. Of these lodes, the most promising and persistent both over strike and depth are i) A, ii) HW-I, iii) II, iv) III-FW and v) III.

The total geological in-situ reserves estimated at 0.5% Cu cut-off and at 0.2% Cu cut-off over the entire strike length of 1.37km between the geological cross section of S1-S1' and S-17-S17'.

At 0.2% cut off **15.16** million tonnes                      **0.60%** Copper

At 0.5% cut off **5.22** million tonnes                      **1.31%** Copper

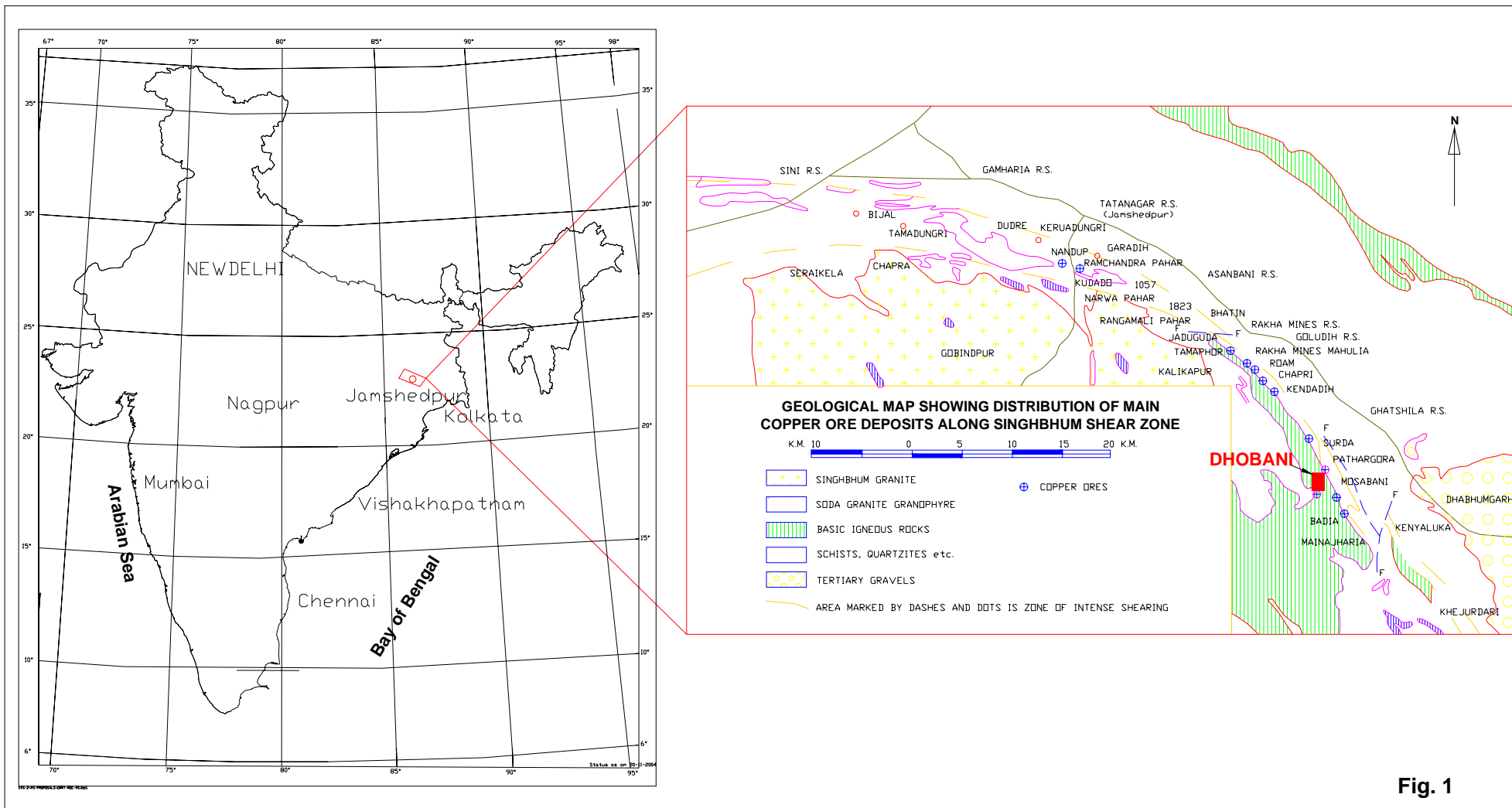
**The Deposit has been classified as Category 'C' of UNFC 332.**

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. 329.11 Lakhs.**

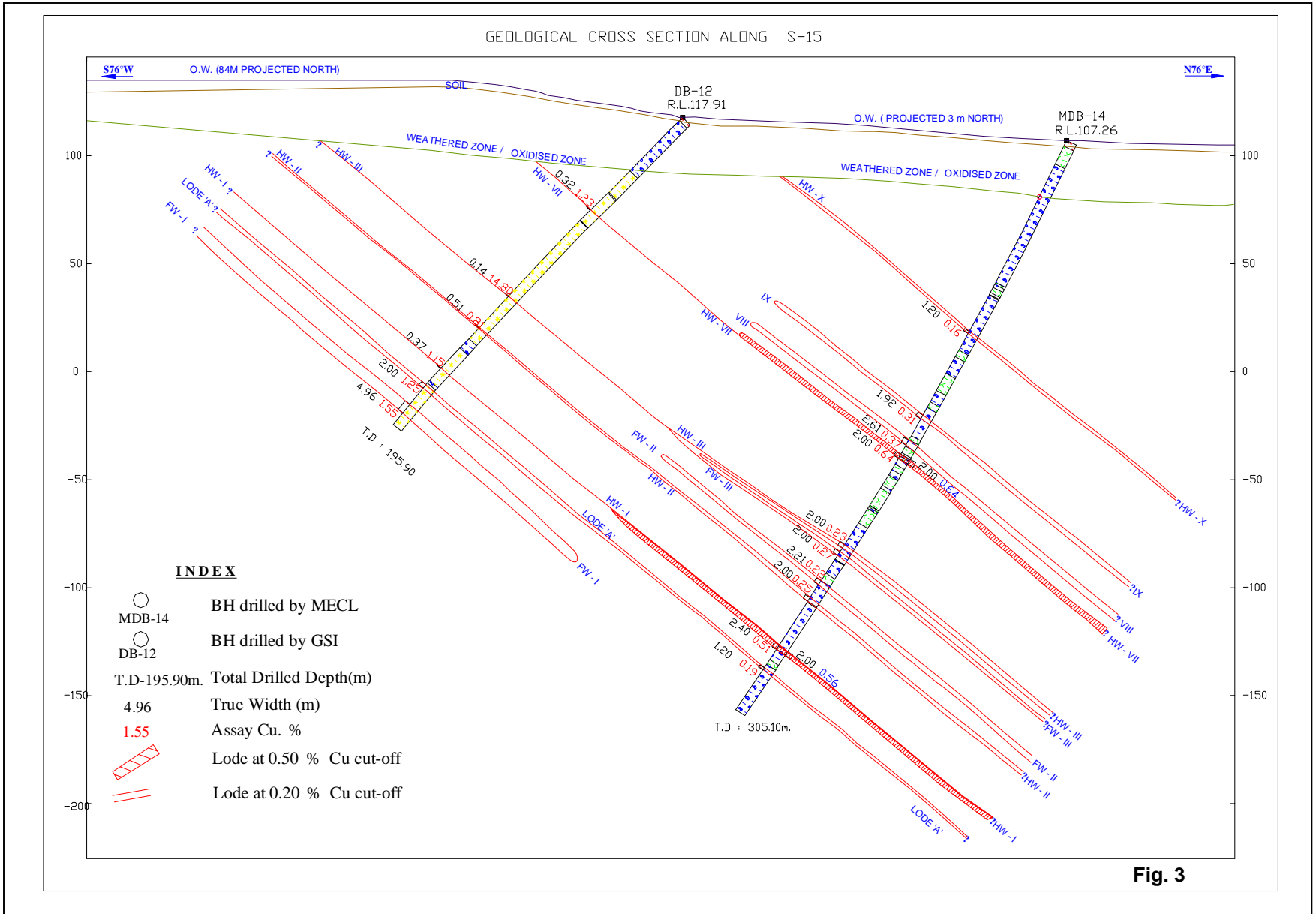


# LOCATION MAP OF DHOBANI MINE AREA

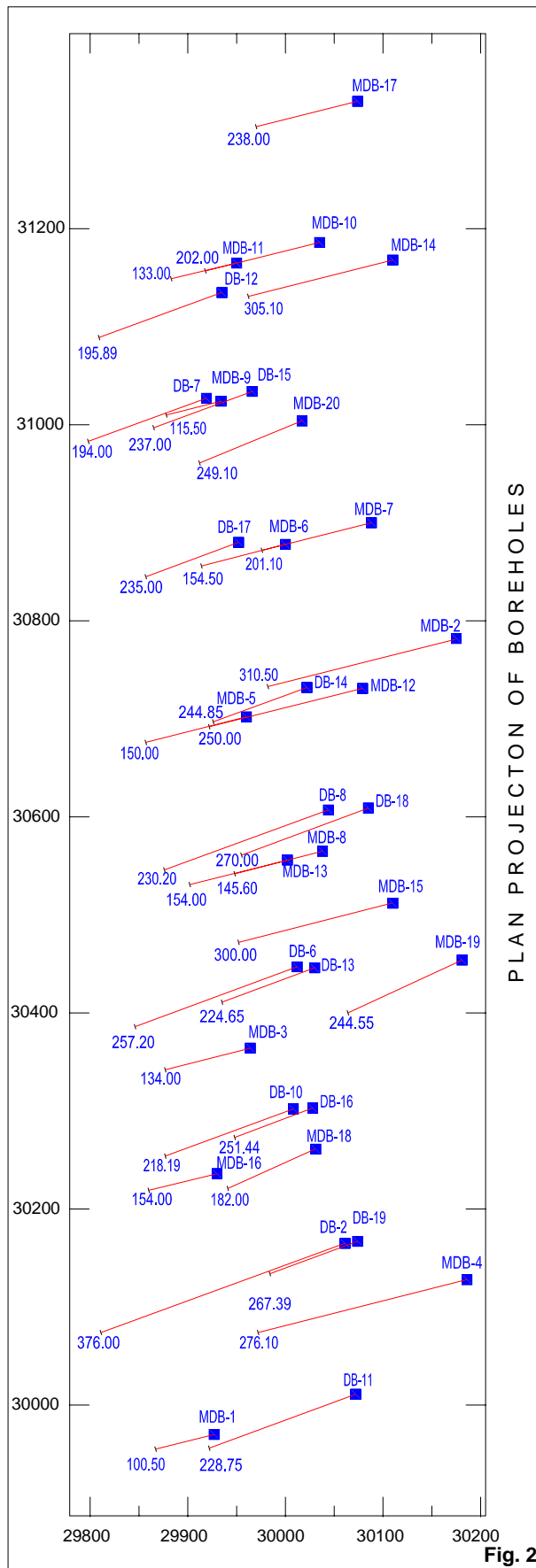


**Fig. 1**

# GEOLOGICAL CROSS SECTION

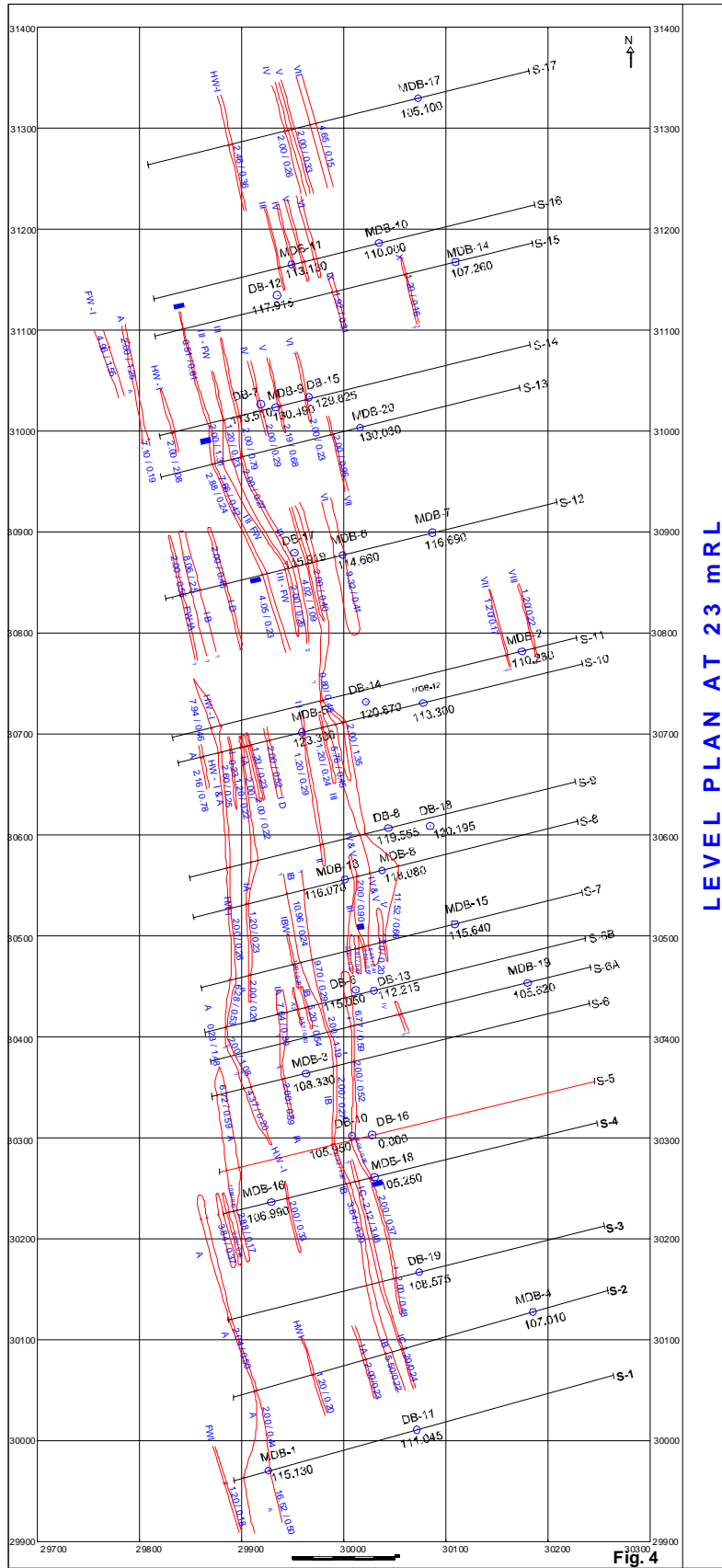






PLAN PROJECTION OF BOREHOLES

Fig. 2



LEVEL PLAN AT 23 mRL

Fig. 4