

CHAPTER-IV

GEOLOGY

4.1 General

Already the area north of Pathakhera and Satpura mines has been explored by the erstwhile N.C.D.C.Ltd. and the findings incorporated in the "Geological Report on area north of Pathakhera Mine I & II."

The area covered in that report was centrally divided by a major fault F7F7, the upthrown (western) part of the fault has already been developed as Shobhapur Mine, while the downthrown (eastern) part constitutes the area named as Tawa block recently explored to form basis of this report.

4.2 Geological set up of the block

4.2.1 Except the south-eastern portion (upthrown part of faults F1F1 and F12F12) covered by sandstone of Barakar formation, major part is covered by Motur formations.

4.2.2 Generalised stratigraphic sequence:

TABLE-IV(A)
GEOLOGY

<u>Formation</u>	<u>Lithology</u>	<u>REMARKS</u>
Recent	Soil	Generally sediments of Tawa river
Intrusive	Dolerite Dyke	Intrusive phase of Deccan Trap. Many dykes of variable thickness are available, the most prominent one is trending E-W which demarcates southern boundary of a part of the block, few others are exposed in the Tawa river and a few in isolated patches. Coal in contact generally found burnt. Creates problem in systematic planning. Mapped by magnetometric surveys conducted geophysically.
Moturs	Medium to coarse grained sandstone with thin mottled shale.	Difficulty in distinguishing from the underlying Barakars due to pre-dominant arenaceous nature of moturs is solved by the persistent presence of thin mottled shale band at the base of the moturs. Thickness - 60 to 90 m, covers major part of the block.
Barakars	Coarse to medium grained sandstone with shale, carb. shale and coal bands.	Total about 450 m thick. Top 80-100m - Medium to coarse grained sandstone Middle 100m Sandstone, shale & carbonaceous horizons. All three workable coal seams are present in this zone. Bottom 250 m Fine grained garnetiferous sandstone having a few thin carb. shaly coal horizons

4.3 STRUCTURE

Exposures along Tawa river and sub-surface data collected by drilling were utilised for interpreting and enabling plotting of floor contours of the different seams besides deciphering the trend of the formations.

Trend of formations NE-SW - the strike takes a swing towards EW in the SW part.

General inclination - 1 in 7 to 1 in 12 towards NW, but very steep near the faulted area in the western part.

Topography - rugged, dissected by numerous faults.

Exposures of massive sandstone		Observed in many places.
--------------------------------	--	--------------------------

4.4 Faults

The Tawa Block is devoid of major faults though its eastern, southern and western boundaries are defined by major faults. The numbering of the faults done in the NCDC-1973 Geological Report has been retained as far as practicable, and the faults newly identified named alphabetically. The details of individual faults are furnished in the table which follows:-