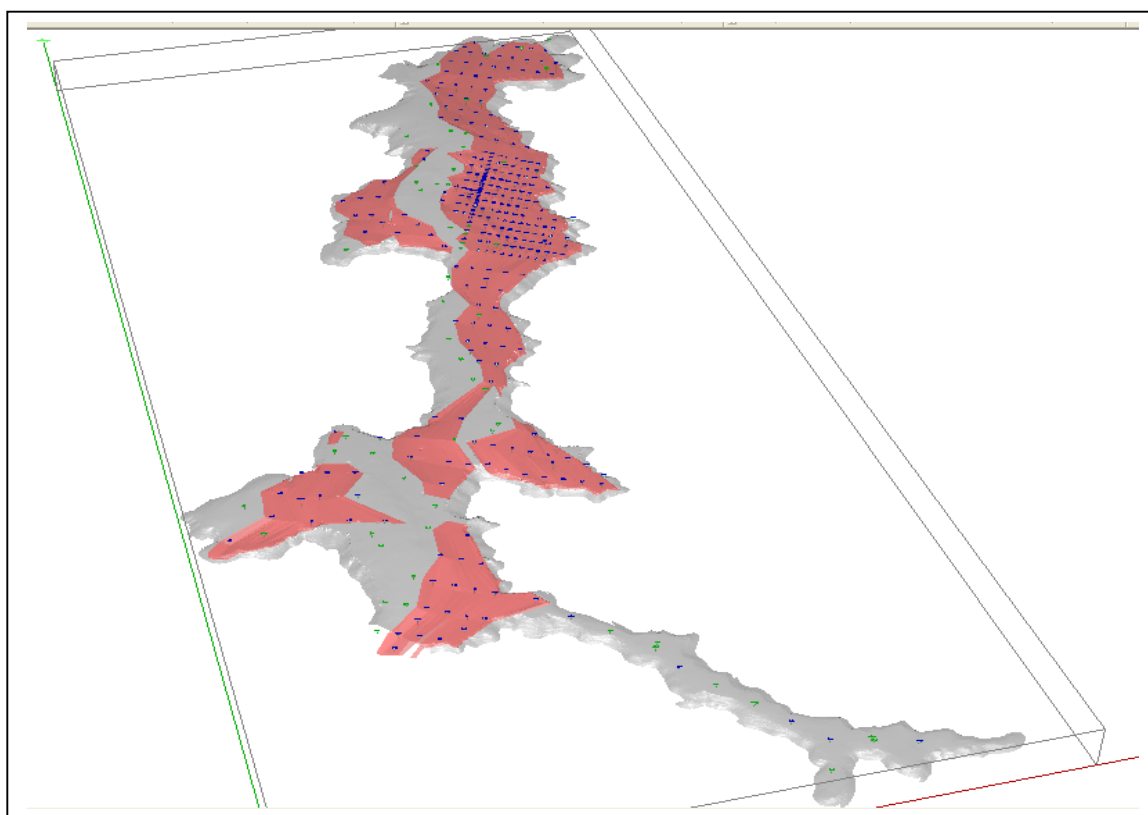


EXPLORATION REPORT
EAST COAST BAUXITE PROJECT
KODINGMALI BAUXITE DEPOSIT
KORAPUT DISTRICT, ORISSA

EXECUTIVE SUMMARY



MINERAL EXPLORATION CORPORATION LIMITED
(A Government of India Enterprise)
Dr. Babasaheb Ambedkar Bhavan,
High Land Drive Road, Seminary Hills,
NAGPUR-400 006
DECEMBER - 1983

**GEOLOGICAL REPORT ON EXPLORATION
(EAST COAST BAUXITE PROJECT)
BAUXITE DEPOSIT OF KODINGMALI PLATEAU
KORAPUT, ORISSA**

EXECUTIVE SUMMARY

1.0 LOCATION

The Kodingmali bauxite deposit is nearer to Panchpatmali bauxite deposit, which is under development by NALCO for production of Alumina and Aluminium. The Kodingmali bauxite deposit contains large tonnages of bauxite and is located favourably with regard to many of the infrastructural facilities.

2.0 GEOLOGY AND STRUCTURE

Bauxite of Kodingmali deposit occurs as an integral part of the laterite profile derived from the in-situ chemical weathering of the underlying khondalite. It is in the form of a gentle to moderately sloping blanket capping the parent rock and show both lateral and vertical continuity except for a medium ridge of weathered khondalite within the deposit which effects the continuity. The capping is marked by a discontinuous string of scarp faces all round the peripheries with a length of 29.78 km. and stands as a bold sign-board without any vegetation. The plateau occupies an area of about 6 sq.km., of which the laterite / bauxite spread accounts for an aggregate of about 3.5 sq.km. The highest and lowest elevations of the capping are 1276.47 m and 1089.27 m. The bauxite zone is overlain by a thin veneer of loose clay / soil with boulders of laterite / bauxite, which is generally of 0.50 m thickness. The ratio of overburden to ore is 1:3.16.

3.0 MINERALISATION

The bauxite is of metal grade, characterized by low silica and titania, moderate alumina and somewhat high iron oxide contents. The most predominant mineral of the bauxite is gibbsite, which accounts for about 90% of the total alumina of the ore. The incidence of Boehmite is negligible. The bauxite zone is interspersed with impersistent minor and thin patches of non-ore, which are essentially lateritic in nature.

4.0 QUANTUM OF WORK DONE

The volume of exploration carried out by MECL comprised: (i) Topographic Surveying over 7.28 sq.km area (ii) Surface geological mapping of 7.28 sq.km on 1:2000 scale (iii) Exploratory drilling of 9114.65 m in 343 vertical and 41 inclined boreholes by dry methods (iv) Deep pitting of 293.80 m in 14 pits (v) Integrated Laboratory tests on 11,727 samples to determine the Chemistry and mineralogy of the deposit by chemical, petrological, X-ray diffraction, derivatographic and spectroscopic methods (vi) R&D studies (vii) Autoclave tests on selected samples and (viii) Statistical and geostatistical analysis of exploration data.

5.0 ORE RESERVE ESTIMATION

The insitu reserves of bauxite are computed at a cut-off of +40% Al₂O₃ and –5% SiO₂ based on the data obtained from 283 vertical dry holes by both “geological cross section – linear” and “geological block” methods. These reserves are categorized as ‘A’, ‘B’ and ‘C’ types based on the degree of exploration in different parts of the deposit, geological characteristics and on the accuracies of estimates. Viz. 90%, 70-90% and >70% at 95% confidence level, for three categories respectively.

The reserves established in the deposit are 84.93 million tones with 2.37% of average SiO₂ and 46.72% of average Al₂O₃, comprising 17.17, 29.57 and 38.19 million tones of ‘A’, ‘B’ and ‘C’ categories respectively.

Autoclave tests indicated that the recovery of gibbsite alumina ranges between 86 and 96% of the total alumina content by the Bayers process.

The Kodingmali bauxite deposit contains large tonnages of bauxite and is located favourably with regard to many of the infrastructural facilities. Further it is nearer to Panchpatmali bauxite deposit, which is under development by NALCO for production of Alumina and Aluminium.

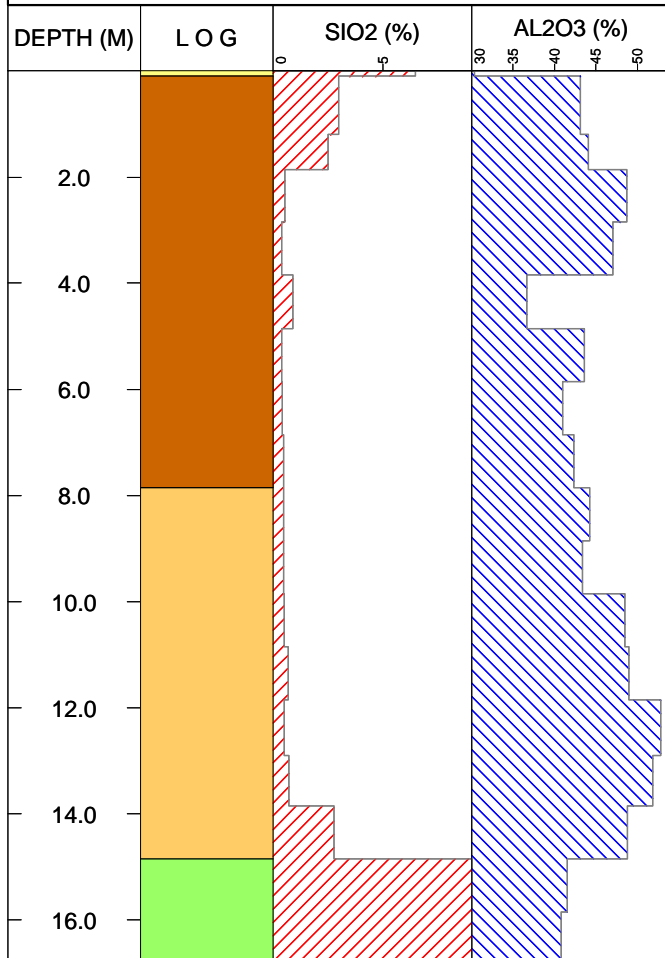
This deposit has been placed under Category ‘A’ of UNFC 221.

The total cost of exploration is Rs. 93.01 Lakhs.

KODINGMALI BLOCK

Drill hole name D-246
Depth portion 0.00 M - 16.80 M

GRAPHIC LOG(B.H. D-246) SHOWING LITHOLOGY & CHEMICAL ANALYSIS



BAUXITE ZONE

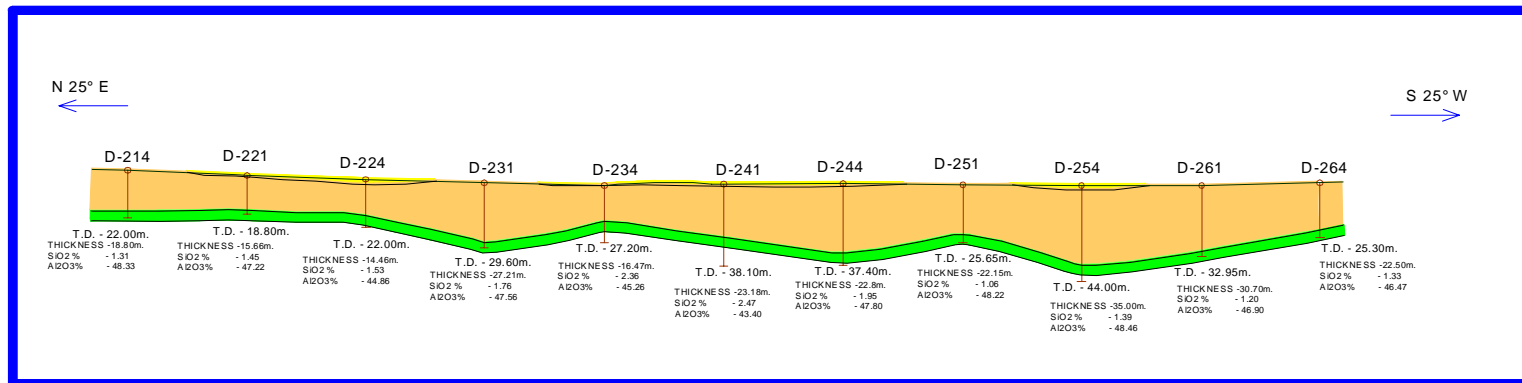
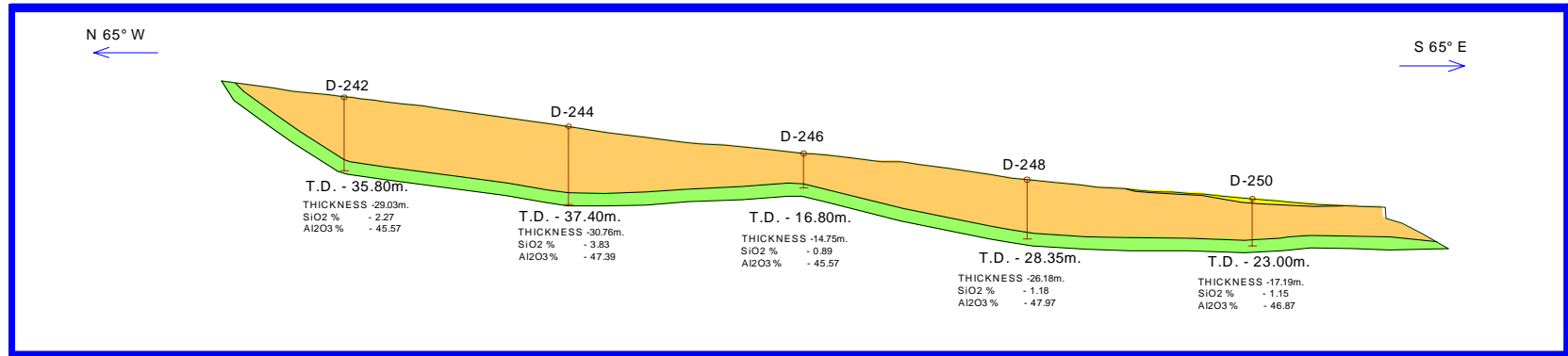
FROM	TO	TH.	SiO2	AL2O3
(m)	(m)	(m)	(%)	(%)
0.10	14.85	14.75	0.89	45.57

INDEX

	OVERBURDEN (SOIL & LATERITE)
	FERRU. LOW GRADE BAUXITE
	MEDIUM GRADE BAUXITE
	KHONDALITE

PLATE-IV

GEOLOGICAL CROSS SECTION KODINGMALI BAUXITE DEPOSIT



D E X

- OVERBURDEN
- BAUXITE
- KHONDALITE

PLATE-III