Projects recommended byTCC-II, NMET

1. Proposal For Preliminary Exploration (G-3) For Bauxite & Associated Minerals in Nundhatad Block (5.12 sq km) in Abdasa tehsil of Kachchh district, Gujarat.

[Implementing Agency- MECL]

	Features	**Details**
	BlockID	Nundhatad Block (5.12 sq km)
	Exploration Agency	Mineral Exploration & Consultancy Limited (MECL)
	Commodity	Bauxite & Associated Minerals (Titanium, Vanadium, Gallium, REE)
	Mineral Belt	Matanomadh Formation of Paleocene
	Completion Period with entire Time schedule and cost	14 months, 125.11 lakh
	Objectives	The present exploration programme at G-3 stage has been formulated to fulfill the following objectives: i) Preparation of detailed Geological map at 1:4000 scale to demarcate various lithounits like Bauxite, laterite, basalt (deccan volcanics), shale, limestone, sandstone, clay etc. with their structural manifestation. ii) Collection of 50 bedrock/chip samples from bauxite/ aluminous Laterite bearing zones. iii) Pitting for delineating the bauxite/ aluminous Laterite zones prior to borehole drilling at 400mX400m interval. iv) Topographical survey at 1:4000 scale will be carried out. v) To prove the occurrences of Bauxite zone(s) and to delineate the depth continuity of it by planning systematic boreholes according to the MEMC norms i.e. 400mx400m interval. vi) Two boreholes will be drilled upto the basement i.e basalt (Deccan volcanic). vii) To assess the quality and the thickness of Bauxite horizons in order to delineate the Bauxite resources at G-3 (333) level in the block as per UNFC norms. viii) Along with Bauxite, resources of Titanium, Gallium, Vanadium and Associated Minerals will also be reported if encouraging values are encountered. ix) To carry out exploration as per Minerals (Evidence of Mineral Contents) Rules, 2015, Mineral Auction Rule–2015 and MMDR Act–2015 as to facilitate the Government of Gujarat for auctioning of the Bauxite Block.

<table>
<tr><td></td><td>Whether the work will be carried out by the proposed agency or through outsourcing and details thereof. Components to be outsourced And name of the out source agency</td><td>Work will be carried out by MECL.</td></tr>
<tr><td></td><td>Name/Number of Geoscientists</td><td>Two Geoscientist (Field+HQ)</td></tr>
<tr><td></td><td>ExpectedFielddays(Geology)GeologicalPartyDays</td><td>Geologist Party days: 150 days
Survey Party days: 45 days</td></tr>
<tr><td>1.</td><td>Location</td><td>The Nundhatad Block area falls in the Survey of India Toposheet No.41E/04 and covers a total area of 5.12 sq.km. The block area falls in and around the villages Nundhatad, Kharua and Chiyasar in Abdasa tehsil of Kachchh district, Gujarat.</td></tr>
<tr><td></td><td>Latitude and Longitude</td><td><u>Corner points of Nundhatad G-3 Block (5.12sq.km)</u><table><tr><th>OINTS</th><th>Latitude</th><th>Longitude</th></tr><tr><td></td><td>23° 08' 26.63" N</td><td>69° 05' 20.02" E</td></tr><tr><td></td><td>23° 09' 4.40" N</td><td>69° 06' 39.58" E</td></tr><tr><td></td><td>23° 07' 59.71" N</td><td>69° 07' 3.24" E</td></tr><tr><td></td><td>23° 07' 22.85" N</td><td>69° 05' 55.81" E</td></tr></table></td></tr>
<tr><td></td><td>Villages</td><td></td></tr>
<tr><td></td><td>Tehsil/Taluk</td><td>Abdasa</td></tr>
<tr><td></td><td>District</td><td>Kachchh</td></tr>
<tr><td></td><td>State</td><td>Gujarat</td></tr>
<tr><td>2.</td><td>Area(hectares/squarekilometers)</td><td></td></tr>
<tr><td></td><td>BlockArea</td><td>5.12 sq.km</td></tr>
<tr><td></td><td>ForestArea</td><td>Area is devoid of any forests</td></tr>
<tr><td></td><td>GovernmentLandArea</td><td>Data not available</td></tr>
<tr><td></td><td>PrivateLandArea</td><td>Data not available</td></tr>
<tr><td>3.</td><td>Accessibility</td><td></td></tr>
<tr><td></td><td>NearestRailHead</td><td>Bhuj Railway Station (70 Kms).</td></tr>
<tr><td></td><td>Road</td><td>Gujarat SH-91 passes 4kms north from the block connecting Bhuj-Kothara-Naliya. NH-41 passes 18kms west from the block. The entire block area is well connected by motorable roads.</td></tr>
<tr><td></td><td>Airport</td><td>Bhuj airport is around 72 kms from the block.</td></tr>
<tr><td>4.</td><td>Hydrography</td><td></td></tr>
<tr><td></td><td>Local Surface Drainage pattern(Channels)/</td><td>The overall drainage pattern is dendritic, particularly over the Deccan volcanics. Coarse trellis to sub-trellis pattern, suggestive of structural control, is prominent in the</td></tr>
</table>

	Rivers/Streams	sedimentary terrain. Trellis pattern is seen on the back slopes of basaltic cuestas. The drainage density and the drainage frequency is high in this area, but due to scanty rainfall these streams are ephemeral in nature and remains mostly dry throughout the year and act as flood channels during the monsoon. The drainage is controlled by both lithology and structures in the area. Kankawati, Naira and Vengdi rivers are the major rivers in the area. The rivers flow from NE to SW direction.
5.	Climate	
	MeanAnnualRainfall	The average annual rainfall ranges from 25 cm to 40 cm and is mostly received between July and September months.
	Temperatures(December)(Minimum) Temperatures(June)(Maximum)	Minimum temperatures is around 5-7^{O}C (Nov-Jan) Maximum temperatures reaches upto 42-45^{O}C(March-June)
6.	Topography	
	ToposheetNumber	41E/04
	Morphology of the Area	The area under toposheet No, 41E/04 shows a high degree of physiographic variations with a number of hills and intermittent valleys. The hills are steep and flat topped with fine grained massive basalt. The ground level in the area is at about 100 m above MSL and the maximum elevation is at 170 m.
7	Availability of baseline geosciences data	
	GeologicalMap(1:50K/25K)	Available, NGDR (1:50000)
	GeochemicalMap	Not applicable.
	GeophysicalMap	Not applicable.
8.	JustificationfortakingupG-3or G-2Stage mineral Exploration	i) The Commissioner of Geology and Mining (CGM), Gujarat has carried out exploration in Kachchh basin for bauxite and identified several blocks for exploration of Bauxite based on their previous works. They published the information of these blocks in Gujarat's Mineral Wealth booklet. CGM, Gujarat (via official email dated 14/11/2024) sent MECL a NOC approval to take up exploration investigation in those blocks. The proposed Nundhatad Bauxite block (G-3 stage) is one of them.

		ii)	The lithology of the area includes Bauxite/Laterite associated with Deccan Trap Volcanics. The bauxites of Matanomadh formation have been formed by supergene alteration of the pyroclastic facies of Deccan basalts. It consists of ferruginous laterites which rests on the Deccan traps and, in turn, are covered by the Eocene Gypseous shale beds.
		iii)	In this area, the bauxite deposits are associated with the laterites of the Matanomadh formation of rocks. The area is explored by CGM through pitting, trenching and drilling. The chemical analysis results show a good percentage of Al_2O_3, averaging 50.50% with SiO_2 percentage of 8.44%. They reported a reserve of 1.20 m.t of bauxite in the area. A total 39 boreholes were drilled in and around the area which encountered a maximum 10m of bauxite. In the vicinity of this block, there are leases of bauxite and thus the block is proposed for G3 level exploration.
		iv)	Geological mapping of Mesozoic and Tertiary rocks of Kachchh (FSP- 1981-82 & 1984-85) of the area reveals presence of Bauxite. The rocks belonging to the supra-trappean formation is represented by oolitic and pisolitic, at times conglomeratic (re-worked) bauxite and laterites of varied colour along with ash/shale beds, lithomarge aluminous grit, felspathic sandstone and aluminous clays. The supra-trappean sediments form hard compact, low ridges and plateau above Deccan Trap Mesozoic rocks. It is suggested that in-situ lateritization and bauxitization of Deccan Traps and associated pyroclastic materials have resulted in the formation of these bauxite.
		v)	The bauxite in the study area has formed by the in-situ alteration of underlying Deccan traps. Bauxite over basalt parent rock has higher titania compared to the bauxite from Khondalite-Charnockite. Based on that, prospecting of titania is also kept under the proposed exploration scheme.
		vi)	Ongoing projects for bauxite and associated minerals are in progress by MECL (in Julrai and Dhrang block) and other exploration agencies in the Matanomadh formation throughout the Kachchh district. MECL team also conducted field visit and

		identified bauxite associated with Laterite around the proposed block.