

EXECUTIVE SUMMARY

of

SAKHARI BAUXITE ORE MINE

ML Area : 62.77 Ha.

Sakhari - village of

**Mandangad Taluka, Ratnagiri - District,
Maharashtra State**

PROPONENT

M/s. Ashapura Minechem Ltd

February -2024

EIA Consultant

MINERAL ENGINEERING SERVICES

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1.0 INTRODUCTION

M/s Ashapura Minechem Ltd is a Public Limited Company registered under the Companies Act 1956 and is engaged in production of Calcined Alumina as well as in exporting of Metal Grade Bauxite for Alumina industries and low-grade Bauxite suitable for Cement Industries.

M/s Ashapura Minechem Limited has applied for mining lease over an area of 62.77 ha in survey nos 4,5,6,7, & 8 in Sakhari Village, Mandangad Taluka, Ratnagiri District of Maharashtra. Prior approval of Government of India is obtained under Sec 5(1) of MMDR Act, 1957 vide letter no 4/73/2004-MIV dated 03.07.2009

The mining lease was granted by Under Secretary to Government of Maharashtra, Industries, Energy and Labour Department, Mantralaya, Mumbai – 400 032, Maharashtra vide letter no MMN-1004/C.R. 654/IND-9 dated 12.08.2009

As per the MMDR Amendment Act, Mining Lease is granted for a period of 50 years from date of Mining Lease Execution

The Project Proponent is in the process of obtaining Environmental clearance for 0.25 Million Tonnes of Bauxite production per annum. Accordingly, an application was submitted in Parivesh portal for obtaining Environment Clearance for the Project on 11.11.2023. The Expert Appraisal Committee of MSEIAA considered the Project for grant of Terms of References. The MSEIAA issued the TOR vide its Letter No F.No. SIA/MH/MIN/452074/2023 dated 17.11.2023.

M/s. Ashapura Minechem have entrusted the assignment of assessment of the environmental impacts arising due to the proposed Project to NABET Accredited EIA Consultant Viz. M/s Mineral Engineering Services, Ballari, Karnataka to facilitate grant of Prior Environment Clearance for the Project.

2.0 PROJECT DESCRIPTION

The Sakhari Bauxite Minewith an area of 62.77 hectares falls under in Sakhari Village, Mandangad Taluka, Ratnagiri District of Maharashtra state. The block area falls under the Survey of India Toposheet no. E43N1

The Mineral Block is having about 3.355 million tonnes of Mineral Reserves & Resources as on 31.12.2023 which is likely to increase with proposed exploration as per approved mining plan. The proposed production capacity will be 0.25MTPA of bauxite with an overall OB to Waste ratio of about 1:0.40. The mining lease was granted for Bauxite mining for a period of 50 years. The proposed Bauxite mine shall be developed by opencast mechanized mining method by deploying state of art heavy earth moving machineries without using drilling & blasting.

2.1 ENVIRONMENTAL SENSITIVITY

No National Park, Wildlife Sanctuary or Migratory Corridors of Fauna is present inside the Project Site or within 10 Km radius area of the Project Site. There is no river or stream passing through the ML area.

The geographical aspect of the Mineral Block Location is given below.

Sanctuary / Tiger Reserve/ Elephant / any other Reserve Forest	RF Near Kurvada Village-8.42 Km RF Near Gadabwadi Village -7.8 Km RF Near Madale Village -7.8 km RF Near Dharlavalu Village-9.5 Km RF Near Nivie -8.50 Km RF Near Kolmandle Village-7.4 Km	
Biosphere Reserve	No	
Water Bodies	Bharaja River-0.23 Km	
	Arabian Sea- 2.81 Km	
	Savitra River-4.0 Km	
Defence Installation	No	
Seismic Zone	IV	
Nearest Habitat	Sakhari Village - 0.24 Km	
Nearest ESA Village		
Archaeological monuments/ places of worships	-- Shree Mahalaxmi temple-2.7 km	
Coastal Regulation Zone (CRZ)	CRZ Boundary	Adjacent to the lease boundary
Distance from the HFL of the river in m	80 m	
Nearest School	ZP School Sakhari Village- 0.178km	
Mangrove	Mangroves-0.15 KM	
Industries	--	---

2.2 GRANT OF TOR & BASE LINE DATA MONITORING

The TOR for the Project was accorded vide SEIAA Letter No F.No. SIA/MH/MIN/452074/2023 dated 17.11.2023. The Baseline Data was collected during the period of March to May 2023.

2.3 MINING METHODOLOGY

The Sakhari Bauxite Mine will be an open cast – ‘A’ category fully mechanized mine which will be worked with the use of heavy earth moving machineries. The earth moving machineries are used for excavation, loading, hauling & transport of ore and waste rock. It is proposed to operate the mine in two shifts having effective working hours of 14 hours per day. The mining operations have been fully mechanized with the use of heavy earth moving machineries. The earth moving machineries are used for loading, handling/ transporting of waste rock and ore. The excavators are used for digging of ore and waste and other primary handling. The excavators are used of different bucket capacity.

The dumpers are used for ore hauling, waste disposal to dumps and shifting of processed ore to mineral stacking area. In addition, wheel loaders are used for leveling waste dumps, loading of processed/stockpiled ore. The finished product, i.e., dry crushed/screened bauxite / ROM (Bauxite) will be exported or sold to domestic industries at pit head The ore transportation will be done by tippers with the capacity of 10 Tonnes as well as by dumpers with higher capacity.

2.4 PRODUCTION, RESERVES AND LIFE OF MINE

The existing reserves and resources are about 3.355 million. With the bauxite production 0.25 million tonnes per annum, the expected life of the mine is about 15 years from the date of start of mining operations. The Mineral Reserves and Resources are likely to increase with proposed exploration and life of the mine will increase.

2.5 MANPOWER, WATER & POWER REQUIREMENT

Man Power: The Project shall provide employment to 72 persons, in direct and indirect way. About 12 persons directly and 60 persons indirectly in the form of hired truck drivers, hired machine operators, local workshops, contract workers for construction works like parapet wall, silpaulin covering work, plantation work, cleaning works etc. to the local villagers.

Water Requirement: The Water Requirement of the Project is estimated to be maximum 80 KL/Day. Out of this, 5 KL/Day of the water is required for domestic purpose, 5 KLD for afforestation and the balance 70 KLD for dust suppression.

Power Requirement: Electricity from the State Electricity Board will be used for Mine Office and Workshop premises. Diesel Fuel will be used for Heavy Earth Moving Machineries, like excavator, loader and transport vehicles etc.

Fuel: 1470 liters/day

Energy: 0.5 MW

2.5 RESETTLEMENT & REHABILITATION

There are no structures and habitation within the mining lease area. There is no proposal of resettlement and rehabilitation during mining plan period.

3.0 DESCRIPTION OF THE ENVIRONMENT

The Sakhari Bauxite Mine is the core zone for the present EIA study. The area encompassing 10 km radius from the boundary of the core zone has been defined as the buffer zone. The core zone and the buffer zone together constitute the study area. The Baseline Environmental Data with respect to Air, Water, Noise and Soil Quality in the study area for the present EIA study was collected during the Summer Season 2023. The various studies on hydrogeology, flora, fauna, and socioeconomics were also conducted during the same period. Sampling and analysis had been carried out by Environmental Laboratory a Unit of Mineral Engineering Services, Laboratory recognized by MoEF&CC and also accredited by NABET.

3.1 TOPOGRAPHY

The study area falls between Western ghats and Arabian sea. The highest elevation is 352m AMSL towards east and lowest elevation is 0 m AMSL towards the west side. The mining area is a non-forest land The terrain is sloping towards south. A public road is passing at the southern part of lease area. No human settlement within mining lease area. The nearest village is 0.5 Km away. The highest and lowest elevations in the area have an elevation difference of 195.5m

3.2 DRAINAGE

The area is situated on elevated ground and the area is in mound shape. The area is elevated from the surrounding and there is as such no water sources in the area from which inherent seepage of water occur. As the area is in elevated ground does not have any specific drainage pattern. The plateau is having a radial drainage system

3.3 AMBIENT AIR QUALITY

8 stations were fixed covering 7 villages and 1 core zone covering all the directions to collect baseline data on ambient air quality. The frequency of sampling was 2 days/week for 3 months and the parameters covered were as per CPCB, NAAQS guidelines. The statistical analysis of Ambient Air Quality is as follows, the maximum values of SO₂, NO₂, PM₁₀ & PM_{2.5} in the study area were observed to be 17, 19, 56 & 32 µg/m³ respectively.

All the parameters including CO, Pb, and O₃ were sampled and analysed as per NAAQ standards and results compared to AAQM. The results were observed to be well within the permissible limits. The maximum values in buffer zone villages also were well within the permissible limits.

3.4 NOISE LEVELS

9 stations including 1 station in core zone and 8 in buffer zone villages were fixed to study baseline noise quality. Leq during day & night were observed. The Leq value in the core zone during the day and night were observed to be 48.9 dB(A) and 37.2 dB(A) respectively. The results when compared to Noise Quality Standards were well within the permissible limits.

The Leq values in buffer zone during day and night were found to be ranging from 51.5 dBA to 40.1 dBA respectively. The results when compared to Noise Quality Standards were found to be well within the permissible limits.

3.5 WATER QUALITY

Water Quality Monitoring was done by grab sampling once in a season for 3 surface Water and 6 Ground Water samples. IS: 3025, APHA 21st Edition, & IS:1622 standards were used for analysis. The analysis results were compared to IS standards IS:2296 & IS: 10500:2012 and the results were found to be well within the permissible limits as per the standards.

3.6 SOIL QUALITY

Soil Quality Monitoring at 5 locations including one from the mining lease area and others from nearby village agricultural fields were collected and analysed during the study period for Textural & Physical Parameters and Nutrients. They were all observed to be within normal soil quality fit for cultivation.

3.7 LAND ENVIRONMENT

The existing major land use of study area covering 10 km radius constituted of 41.63 % RF & Vegetation, 2.53% mangroves, Water bodies 6.85 %, 8.69% cultivated land, 13.30 % Settlement area and 25.75% Scrub Land. Therefore, the magnitude of impact on biodiversity is practically nil.

The total area of 62.775 Ha., will be used for the Mining and allied activities, during the mining lease period.

During the conceptual period disposal of waste will continue within the lease area by way of backfilling of the exhausted pit. Simultaneously, the matured portion of the reclaimed pit will be progressively rehabilitated with plantation of suitable species.

3.8 BIOLOGICAL ENVIRONMENT

A detailed biological study report of the study area including core zone and 10 km buffer zone with details of flora and fauna, endangered, endemic and RET Species is furnished.

A total of 94 plant (trees, Shrubs & herbs) species were recorded in 10-km radius study area; out of which 94 species were found in buffer zone and 30 species found in core zone. The dominant species were *Acacia auriculiformis*, *Terminalia paniculata*, *Ficus racemosa*, *Macaranga peltata*, and *Avicennia marina*. 19 species for Mangroves were reported.

There are 10 species of mammals recorded of which one arboreal mammal–Squirrel, Hanuman Langur (Monkey) and remaining were ground dwellers. The omnivorous Mongoose and Jackal, wolf was hinted by rural communities. The most common species sighted by us and local communities are Indian Hare Rats and Jackal. 11 reptile species were recorded within the buffer areas, totally 36 species of birds like as Hornbills, Pigeon, Common Kingfisher and Rufous woodpecker. 9 species of fishes at Bharaja River were recorded within habitats ranging from Agricultural field to scrub thorny forest i.e., catfish, Rohu, Prawn.

3.9 SOCIO-ECONOMIC ENVIRONMENT

There exist few structures within the Mineral Block. During the due course of time, if required these structures shall be shifted for the mining purpose and it is a non-forest land. There are 55 villages which fall within the buffer zone with a total population of 42434. Due to the proposed mining activity, no significant adverse changes are visualized in the traditional way of life of the people residing in the villages of buffer zone.

This mine shall provide employment for about 72 people by both direct & indirect employments which include mine officials, skilled, semi-skilled and unskilled labour and indirect employment, in contractual works & transport. Preference is given to local people for employment.

During the period the Project Proponent shall spend Rs. 19 Lakhs per annum towards Corporate Social Responsibility (CSR) activities in surrounding area in health care, sanitation, safe drinking water, education, gender equality, empowering women, environmental sustainability, ecological balance, public infrastructure, support for sports, NGO's and animal welfare activities.

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The Sakhari Bauxite Mine is yet to start mining and shall operate taking all precautionary measures to reduce the impact of mining operations on Air, Water, Noise and Soil and ensuring all control measures to comply with the prescribed standards.

4.1 AIR ENVIRONMENT

Following measures will be undertaken to control the Air pollution/dust generation during the mining activities: -

Due to high inherent moisture of the ore as well as waste, generation of dust while loading will be minimal. Speed limit of transport vehicles will be enforced.

- Transportation trucks will be loaded to the prescribed capacity and covered with tarpaulin.
- Unpaved roads will be regularly sprinkled with water for which two water tankers each of 10000 liters' capacity shall be provided.
- Nevis Dust Sprinkling system with a fine mist spray will be used for dust suppression along the road as well as stacks.
- The latest machinery having air-conditioned cabin will be used for loading and dozing operations.
- Proper maintenance of transport machinery with regular PUC will be done.
- Providing enclosure and proper exhaust chimney height to DG set and screening plant.
- General aspects of air quality management will be included in induction training to be provided to all employees.

4.2 WATER ENVIRONMENT

There is no perennial surface water source passing through the mineral block area. The estimated quantum of water requirement shall be 80 m³/day, met by bore well water. The wastes and ore generated are non-toxic.

The possible pollutants in the water are the suspended solids which are derived from erosions within the mining areas. Oil spillage from maintenance of machinery will be controlled by grease trap. During rainy season, the water will be diverted through garland drains and collected in the settling tank / mine pit, provided to settle the suspended solid in the runoff water. The settling tank / mine pit will also act as groundwater recharge structure.

4.3 NOISE ENVIRONMENT

Maximum noise is produced from the operation of earth-moving machinery & movement of dumpers in mining operations. No drilling and blasting operations shall be involved. Wide green belt shall be provided surrounding mineral block to attenuate noise pollution. Regular maintenance of mining equipment, machinery & all vehicles shall be done as per the manufactures recommendations to minimize noise generation. Following management measures will be adopted to control noise levels:

1. Provision of acoustic cabins for operators deployed on HEMM.
2. Selection of new low-noise equipment from the manufacturers failing which use of additional retrofits if available.
3. Green belt shall be developed all around the mine will act as an acoustic barrier.

4.4 IMPACT ON LAND ENVIRONMENT

The land within the ML area is private land. Due to mining activity in this area, there will be change in the ground profile in the form of pit. The bauxite deposit is found at a maximum average depth of 8 to 10m.

Hence the maximum depth of the Pit will be maintained 8 to 10 m. The part of the mining pit will be reclaimed by backfilling. Simultaneously, the matured portion of the reclaimed pit will be progressively rehabilitated with plantation of suitable species. The open pit area will act as ground water recharge pit.

4.5 IMPACT ON BIOLOGICAL ENVIRONMENT

There are no wildlife sanctuaries and National wildlife parks within the study area. The ML area is a non-forest land.

In the green belt of 7.5 m along the mineral block boundary, three rows of tree saplings are to be planted within the dugout pits filled with a mixture of manure and soil. For the surface dumps which shall be re-handled and backfilled only mulching with plantation grasses, leguminous plants, shrubs/bush variety of species shall be used.

4.6 IMPACT ON SOCIO ECONOMIC ENVIRONMENT

This mine shall provide employment for about 72 people by both direct employment, indirect employment opportunities in the form of hired truck drivers, hired machine operators, local workshops, contract workers for construction works like parapet wall, silpaulin covering work, plantation work, cleaning works etc to the local villagers.

The mining activities will help in sustainable development of this area including further development of physical & social infrastructural facilities.

Also, by this mining activity, the country achieves the revenue in terms of taxes on bauxite production and exchequer revenue for the State in terms of royalty etc. The project proponent shall assess the health conditions of the workers as per the DGMS guidelines. Noise, air, water quality will be maintained well within the limits.

5.0 ADDITIONAL STUDIES

In additional studies, Risk Analysis followed by Disaster Management Plan, which will help in identifying the possible risks and to promote preparedness to counter any mishap. Risk analysis and disaster management plan have been prepared and incorporated in EIA Report.

6.0 ENVIRONMENT MANAGEMENT PLAN

A Comprehensive Environment Management Plan including development of Green Belt has been suggested. Identification of all potential environmental impacts of a project is an essential step of Environmental Impact Assessment. These are critically examined and major impacts are further studied.

In case of mining projects, change in topography and land use, air pollution, water pollution, waste management, biodiversity and socio infrastructure issues are significant.

The Mine will be operated taking all precautionary measures to reduce the impact of mining operations on Air, Water, Noise and Soil and ensuring all control measures to comply with the prescribed standards. The impact of change of land use will be positive only, as portion of abandoned pit is partly backfilled and afforested and balance portion is left as water reservoir beneficial to local villagers.

Development of green belt along the boundary of ML area will ensure a better environment.

7.0 CORPORATE SOCIAL RESPONSIBILITY

The project proponent proposes to undertake a number of activities under the Corporate Social Responsibility Initiative during the operation of Sakhari Bauxite Block. The capital CSR Budget has been worked out as per the felt needs of villagers during Rapid Rural Appraisal. The proposed budget is to the extent Rs. 19.0 Lakhs /Annum and will be spent in the villages of study area.

8.0 CORPORATE ENVIRONMENT RESPONSIBILITY

In addition to the CSR, the Project Proponent proposes to undertake a number of activities as one-time measures under the Corporate Environment Responsibility Initiative during the operation of Mining Project. Necessary budgetary provisions will be made after obtaining the response from locals during the Public Hearing for implementing the CER Activities in line with the MoEF&CC OM dated 30th September 2020 and 20th October 2020.

9.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental monitoring is required to know the Quality of Ambient Air, Water and Noise Levels during the operation phase of the proposed project and take required corrective measures, in case of any non-compliance with the norms stipulated by regulatory authorities. The methodologies adopted for environmental monitoring will be in accordance with the CPCB guidelines.

10.0 EXPLANATION ON HOW ADVERSE EFFECTS ARE MITIGATED

The EIA/EMP Report has established the Base Line Environment of the Study Area and has assessed anticipated impacts of the Project on the overall ecology & environment. Accordingly, general as well as specific mitigation measures for management of the Key Environmental Parameters have been suggested. Further, specific measures towards monitoring and implementation of the Environment Management Plan along with details of the funds required towards implementation of the Pollution Control Measures are also included in the Report.

By implementing the suggested Environment Management Plan adverse effects of the Project can be mitigated.

11. CONCLUSION

The Sakhari Bauxite Mine over an area of 62.77 hectares is located in Sakhari Village, Mandangad Tehsil of Ratnagiri district of Maharashtra State. The mining lease is having about 3.335 million tonnes of Mineral Reserves & Resources as on 31.12.2023 which is likely to increase with proposed exploration.

The proposed production capacity will be 0.25 MTPA of bauxite with an overall ore to waste ratio of about 1:0.4. The Mineral Block shall be granted for bauxite mining for a period of 50 years after execution of the mining lease deed. The proposed bauxite mine shall be developed by opencast mechanized mining method by deploying state of art heavy earth moving machinery.

Although it is a miniscule operation, the proposed mining industry will improve the economic status of the people in and around the project area, with the direct and indirect employment opportunities and the CSR benefits provided.

Bauxite reserves of this area form mineral wealth, Bauxite is an essential ore of aluminum and is one of the most important nonferrous metals used in the modern industry.

It is also an essential ore for refractory and chemical industries. The country has abundant resources of bauxite which can meet both domestic and export demands.

The production of minerals will benefit to the Government by way of royalty and taxes and will also bring in large employment opportunities to the local populace thereby usher in socio-economic benefit to the backward region.

Further, this project is expected to yield a positive impact on the socio-economic environment of the region. It helps in sustainable development of this area including further development of physical infrastructural facilities. The opening of this mine will boost the economy of the State and improve socio-economic status of the region.