

EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s. Alatge Stone Crushing Industries, a proprietary firm owned by Mrs. Sunita Sunil Patravali, has proposed enhancement in the production capacity of Saigaon – Bagmandla - Danda Bauxite Mine (148.468 ha lease area) from 0.56 Lac TPA to 1.35 Lac TPA at Village-Saigaon, Bagmandla & Danda, Taluka-Srivardhan, District- Raigad (Maharashtra).

As per the New EIA Notification dated 14th September 2006, this mining project falls under Section 7 (ii).

Good grade of Bauxite deposit suitable for the production of Aluminium metal and Alumina is available at Saigaon Danda Bagmandla mine.

1.1 DETAILS OF THE ENVIRONMENTAL SETTINGS

The details of environmental setting of Project Site are given below:

Table: 1

S.No.	Particulars	Details
1.	Nature of the project	Enhancement of production capacity of Bauxite Mining Project
2.	Size of the Project	Enhancement of Production Capacity from 56, 316 TPA to 1.35 Lac TPA.
3.	Locations	
	A. Villages	Saigaon, Bagmandla & Danda
	B. Taluka	Shrivardhan
	C. District	Raigad
	D. State	Maharashtra
4.	Latitude	18 ⁰ 00' 0.2" to 18 ⁰ 01' 24.27" N
5.	Longitude	73 ⁰ 02' 20" to 73 ⁰ 03' 43.04" E
6.	Toposheet No.	47 F/4 & B/16 (Restricted)
7.	Elevation above sea level	115 m above MSL on Southeast side & 79 m above MSL on North side
8.	Nearest Railway Station	Mangaon (70 km from the mine site)
9.	Ecologically sensitive areas (National Park, Sanctuary,	None within 10 km radius from lease area.

SAIGAON DANDA BAGMANDLA BAUXITE MINE (Enhancement in Production Capacity from 0.56 Lac to 1.35 TPA) At Village–Saigaon Danda Bagmandla, Taluka–Shrivardhan, District–Raigad, Maharashtra	Executive Summary of EIA Report
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	Biosphere Reserve, Tiger Reserve, Elephant Corridor, Reserve and Protected Forest)	
10.	Nearby water body	Arabian Sea is at a distance of 2.5 km in West and Savitri River (at 3 km) flows in south direction towards Arabian Sea and one creek also exists in North West direction approximately 2 km away from the site.
11.	Nearest Town / City	Shrivardhan Township (4km , North West)

1.2 PROJECT DESCRIPTION

1.2.1 Basic Requirements for the Project

Table - 2

S. No.	Requirements	Quantity	Source
1	Land	148.468 ha	It's a working mine
2	Water	23 KLD	Mine Sump & Ground Water
3	Man Power	168	Nearby Villages
4	Power (Quantity of Fuel)	0.8 KLD	Nearby Market

1.2.2 Mining Details

Table - 3

S. No.	Details	Explanation
1.	Method of mining	Mechanized opencast
2.	Bench Height and Width	Height: 0.8 m in overburden & 4 to 6 m for ore. Width: 5.0 m in overburden, 5.0 m for ore
3.	Mineable Reserve	7.61 Million Tonnes
4.	Life of the Mine	56 years @ 1, 35, 000 TPA
5.	Extent of mechanization	Air Compressor, Jack Hammer drills, Excavator, JCB / Wheel loader, Portable Magazine, Exploder and Tipper
6.	General Ground Level	200 mRL
7.	Ultimate Working Depth	10 m from surface exposure
8.	Water Table	25 – 30 m bgl (175 – 170 mRL)

1.2.3 Drilling

The holes will be drilled by air – operated jack hammer using slurry explosives & safety fuses in rows of 85 mm diameter and depth of 2.0 m.

1.2.4 Blasting

Broad Blasting Parameters

Diameter of the hole	: 85 mm
Depth of Hole	: 2.0 m
Burden	: 1.0 m
Spacing	: 1.0m
Charge per hole	: 810 gm/hole
Powder Factor	: 5 tons per kg of explosive

1.2.5 Loading and Hauling

Loading of the mineral and waste will be done by Hydraulic excavators on to the tippers and transported from mines to the yard. The rejects/waste will be dumped separately on the dumps located outside the mineralized area.

1.2.6 Extent of Mechanization

Table: 4

S. No.	Machinery	Quantity	Capacity
1.	Self propelled Portable air compressor	01	250cfm
2.	Compressed air operated jack hammer drills	02	-
3.	Excavator EX 200	02	0.9 m ³
4.	JCB / Wheel loader	01	0.3 m ³
5.	Portable Magazine	01	500 kg
6.	Exploder	01	100 Shots
7.	Tippers	06	10 tons

1.3 PROPOSED PRODUCTION

The proposed production enhancement for the Bauxite mine is 0.56 Lac TPA to 1.35 Lac TPA.

1.4 USE OF MINERAL

The bauxite whatsoever mined out during the course of mining operation will be consumed by Aluminium and calcined Alumina producing industries.

2.1 DESCRIPTION OF THE ENVIRONMENT

2.1.1 Climatic condition

The climate of the district Raigad is typical of that on the west –coast of India, with plentiful, regular and seasonal rainfall during the monsoon. Being a coastal district, the diurnal (daily) and seasonal variations temperature are not large. The year may be divided into four seasons; the summer season from March to May, the rainy season from June to September, the post monsoon season – Oct. to November and the winter season from Dec. to February.

The Mean maximum temperature in the area goes up to 34.3 degree centigrade in the month of March, April and May. The mean minimum temperature goes down to 15 to 17 degree centigrade in the month of November / December reported by Indian Meteorological Centre located at Alibag.

Micrometeorology (During study period – March '09 to May '09)

- i) Monthly Maximum Temperature : 37.8°C
- ii) Monthly Minimum Temperature : 26.5°C
- iii) Relative Humidity (Mean)
 - At 8:30 hours : 59% to 81%
 - At 17:30 hours : 42% to 71%
- v) Wind Speed : 04 - 18 kmph
- vi) Wind Direction : From NE to SW

During the study period, ambient air quality and noise level monitoring was done at 10 locations whereas water sampling and soil sampling was done

at 5 locations. The parameters studied for ambient air & noise, water and soil were found with the prescribed limits.

2.1.2 Biological environment

Flora – The main species of flora found in the region are: *Ficus glomerata* (Gular), *Terminalia belericca* (Baheda), *Butea monosperma* (Palas), *Cassia fistula* (Amaltas), *Mangifera indica* (Mango), *Ficus bengalensis* (Bargad), *Embllica officinalis* (Amla), *Aegle marmelos* (Bel), *Dalbergia latifolia* (Shisham) etc.

Flora - The main species of fauna found in the region are: *Felis chaos* (Jungle Cat), *Lepus nigricollis* (Rabbit), *Canis aureus* (Jackal) *Acridotherus tristicus* (Common myna), *Columba livia* (Pigeon), *Naja naja* (Cobra), *Psittacula krameri* (Parrot) etc.

2.1.3 Socio-economic environment

As of 2001 India census, population of the study area is 10837. The Schedule caste is 4.47% and scheduled tribe is 6.36% of the total population. Average literacy rate of 78.17%. The total number of households is 2447. The total working population is 3162.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS

- **Impact on air** - Various mining activities i.e. drilling, blasting, loading, removal of overburden and movement of other transport vehicles used in mining will generate dust (SPM / RSPM). Proper water sprinkling shall be carried out at the mine site. The mineral will be transported by road through covered tippers to reduce the fugitive emission caused by the wind.
- **Impact on water environment** - At present there are no water sources which are passing through the lease area and nearby surrounding. There will not be any accumulation of surface water during rainy season as the lease area is having undulating

topography. Mining will not intersect ground water table. There will not be any beneficiation plant as such no water will be discharged, so no adverse impact on surface water is anticipated.

- **Impact of noise** - Major sources of noise will be operation of mining and allied machinery. The noise levels at all the monitoring stations were found in the range of 40 to 50 dB (A) in buffer zone. Thus the average noise levels in the study area during study period are well within the norms. So there will be no major effect on people due to mining activity.
- **Impact on land environment** - The mining activity will change the landscape of the area. Due to mining activity in the area, there will be removal of lateritic soil and bauxite will be mined out and topography of the area will be changed. There will be no adverse effect on the soil quality of the area as no toxic chemicals will be used during mining operation. Around 16.0 ha mined out area will be converted to water reservoir and 93.0 ha area will be reclaimed by backfilling.
- The study area (10 km radius from the project site) is not having any National Park, Wild Life Sanctuary or Biosphere Reserve etc.

4.0 POST PROJECT MONITORING PROGRAMME

Table - 5

S. No	Description	Frequency of Monitoring
1.	Meteorological Data	Daily
2.	Ambient Air Quality at project site	Quarterly / Half Yearly
3.	Water Quality	Quarterly / Half Yearly
4.	Noise Level Monitoring	Half Yearly
5.	Soil Quality	Yearly
6.	Monitoring of Agricultural crops	Yearly

5.0 ADDITIONAL STUDIES

The Additional Studies conducted are Risk Assessment & Damage Control, Biological Study, Disaster Management Plan.

6.0 PROJECT BENEFITS

The proposed project will provide Direct and indirect employment to the local people. Social welfare programs like provision of medical facilities educational facilities, water supply, recreational amenities will be provided for the employees as well as for nearby villagers. Company will assist the infrastructure development of the area viz. school building development, health medical facilities, Road maintenance, and distribution of uniform & woolen garments according to season and supply of drinking water. Traditional skills of the local people will be preserved & developed by vocational training along with other income generating projects.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 MANAGEMENT OF LAND USE PATTERN

The total lease area is 148.468 ha. At the conceptual stage around 109.0 hectare land will be degraded due to excavation, out of which 93.0 ha will be reclaimed by backfilling & 16.0 ha. area will be developed as water reservoir. The post mine land use of core zone is given in the table below:

Table - 6

S. No.	Land use category	(Area in Hectare)		
		Present	At the end of 5th Year	At the end of life of mine
1.	Top Soil Dump	-	-	-
2.	Waste Dump (External)	-	5.15	16.00*
3.	Excavation (Voids)	2.50	16.00	16.00

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	Excavation (Backfilled)	-	-	93.00
4.	Road	0.45	1.50	1.50
5.	Build up area/Infrastructure	0.2	0.245	0.045
6.	Afforestation (Green Belt)	0.88	3.38	10.0
7.	Mineral Storage	-	0.1	0.3
8.	Processing (Crushing)	-	-	-
9.	Others (Check dams/retention walls etc)	-	0.40	0.600
10.	Undisturbed area	144.438	121.693	11.023
	Total	148.468	148.468	148.468

Source: Approved Mining Scheme with Progressive Mine Closure Plan

***Note:** Out of 16.0 Ha area of Waste Dump (External), 1.5 Ha will be Planted.

7.2 AIR QUALITY MANAGEMENT

- Sharp drill bits will be used for drilling. The drill machine will be operated with wet drilling arrangement.
- Controlled blasting with proper charge per hole will be done.
- All the haulage roads in the area will be kept wide, leveled and compact. Proper maintenance and water spraying on the haul roads will be done.
- Proper maintenance of machines and vehicles will be done in order to improve combustion process and bring the reduction in pollution.
- The mineral will be transported by road through covered tippers to reduce the fugitive emission caused by the wind.
- Green belt/plantation will be developed along road sides, backfilled area and other places to arrest dust.
- Periodical air monitoring will be done as per the CPCB guidelines.

7.3 NOISE ENVIRONMENT

- The drilling will be carried out with the help of sharp drill bits which will help in reducing noise vibration.
- Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- Adequate silencers will be provided in all the diesel engines.
- Plantation will be taken up around the lease area and along haul roads which will minimize propagation of noise.
- Earmuffs will be provided to all operators and employees working near the machinery.
- Periodical monitoring shall be done.

7.4 WATER ENVIRONMENT

- No chemical will be used during mining operation, which can pollute or contaminate the water.
- The water table is at 25 - 30 m below ground level. The workings are proposed at a depth of 10 m from surface level. Thus the workings will not intersect water table.
- Septic tanks and soak pits will be provided for the disposal of domestic effluent.
- Garland drains with siltation pits will be formed on the uphill side of the excavated area to channelize the water inside the excavation pit.
- The contour bunds will be prepared at suitable intervals to check the velocity of the water to control the erosion effect of water.

7.5 SOLID WASTE MANAGEMENT

- The lease area is covered with laterite which is acting as overburden having thickness of 0.8 m. Deepening and widening of the pits will be carried out during mining operation. It is proposed to deepen the bench in bauxite up to the complete thickness of bauxite available in the pit so as to take complete available deposit.
- The waste generated during mining will be initially stacked along the lease boundary and will be filled back in the excavated area when the working will reach up to full depth.

7.6 MANAGEMENT FOR SOCIO-ECONOMIC ENVIRONMENT

- A well-laid plan for employment of the local people will be prepared by giving priority to local people.
- Social welfare programme like provision of medical facilities educational facilities, water supply, recreational amenities for the employees as well as for nearby villagers will be undertaken.

7.7 GREENBELT DEVELOPMENT AND PLANTATION PROGRAMME

The mining lease area is 148.468 ha. Total area covered under green belt/ plantation will be 104.5 hectares {including 93.00 ha of backfilled area, 10.0 ha of unworked area & 1.5 ha of waste dump (external) area}.

8.0 CONCLUSION

Based on the Environment Management Plan, it can be concluded that the project is not likely to cause any significant impact on the ecology of the area, as adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Green belt development around the area would also be taken up as an effective pollution mitigative technique, as well as to control the pollutants released from the mining activity.