

**EXECUTIVE SUMMARY OF  
ENVIRONMENTAL IMPACT ASSESSMENT /  
ENVIRONMENT MANAGEMENT PLAN  
(AS PER EIA NOTIFICATION 2006)**

**OF**

**ADEGAON LIMESTONE & DOLOMITE MINE**

**Khasra No. 630/1, 2A & 2B and 589(P) of Adegaon Village,  
Taluka - Zari Jamni, District - Yavatmal  
(Area 14.63 Ha; Production Capacity @ 0.55 MTPA Limestone/Dolomite)**

**Project Proponent**

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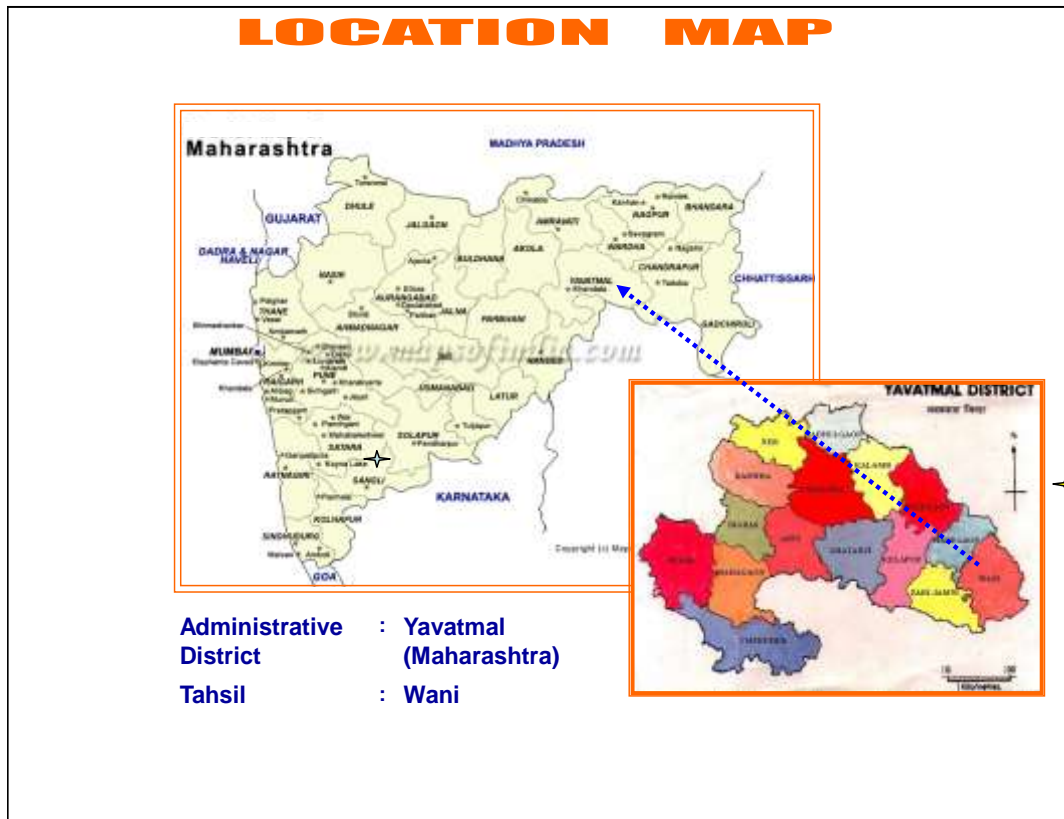
## EXECUTIVE SUMMARY

### INTRODUCTION:

Shri Ajay Masih is a private individual, having 14.63 Ha of Limestone /Dolomite Mine in Yavatmal District, Maharashtra. In order to cater the need for Limestone/Dolomite the lessee has applied for the mining lease at village Adegaoon, Tahsil Zari-Jamni, Yavatmal District, Maharashtra. Commercially exploitable Limestone/Dolomite deposits occur in this proposed mining lease. The proposed Limestone/Dolomite mine (14.63 Ha) will be developed as opencast semi mechanized mine for the production of Limestone/Dolomite @ 0.55 MTPA Limestone & Dolomite, at Conceptual Stage.

An application for obtaining Environmental Clearance was made to the SEAC in accordance with the Notification of MoEF & CC S.O. 1533 dated 14.09.2006. Accordingly, the project was appraised by State Expert Appraisal Committee in its 198<sup>th</sup> meeting held on 5<sup>th</sup> to 7<sup>th</sup> May 2021 for determining Terms of Reference (TOR) for undertaking EIA study. The present summary is extracted from draft EIA/EMP report which is based on TOR issued on 04.06.2021.

**Location Details:** The project is located in Khasra NO. 630/1, 2A & 2B & 589 (P) of village Adegaoon, Taluka Zari Jamni, Dist. Yavatmal. The M.L. area over 14.63 hectares is covered within the Survey of India Toposheet No. 56 I/13 on a scale of 1:50,000 and it is bounded by Latitude 19° 48' 54.04" N to 19° 49' 26.80" N and Longitude 78° 54' 02.70" E to 78° 54' 24.49" E.



**Accessibility** - The area is located in the Zari-Jamni Tahsil of Yavatmal District and is well connected by Wani-Mukutban State Highway. The nearest town Wani lies at a distance of about 35 Km from the proposed mine. The nearest Railway station is Mukutban which is about 3.30 km.

**Landuse**- As per the administrative records, this lease area is Private Land. The lease area is having barren land with rocky exposures & there is no forest land in the lease area.

**Geological formations & Ore Reserves:** The regional geology of the area is represented by Penganga beds (Vindhyaans), Gondwana formations, Lameta beds (Intratrappians) and basaltic lava flows (Deccan traps). The total geological reserves of limestone and dolomite are estimated to be 10,97,250 Tonnes (Limestone – 7,19,250 Tonnes & Dolomite – 3,78,000 Tonnes) respectively. The total mineable reserves of limestone and dolomite are estimated to be 7,58,385 Tonnes (Limestone – 4,92,950.25 Tonnes & Dolomite – 2,65,434.75 Tonnes). The reserves of limestone and dolomite are estimated to be almost at level situation.

**Mining Method:** Mining will be carried out by semi mechanized method. This includes drilling by diesel compressors & jackhammer drills, blasting and removal of Limestone & Dolomite to the surface screening and sizing. The development consists of removal occurs as a capping over Limestone & Dolomite.

The Project envisages mining of Limestone & Dolomite @ 5,50,000 Tonnes as Peak Production (3,57,500 Tonnes Limestone and 1,92,500 Tonnes Dolomite) in the Conceptual Period. However, as per the Mining Plan approved by Indian Bureau of Mines, during the five years period of the Mining Plan the Peak Production shall be @ 82,950 Tonnes per Annum (Limestone – 53917.50 Tonnes/Annum and 29032.50 Tonnes / Annum Dolomite) by conventional mechanized opencast mining methodology using drilling & blasting, excavators and tippers.. The total mineable reserves of limestone and dolomite are estimated to be 7,58,385 Tonnes (Limestone – 4,92,950.25 Tonnes & Dolomite – 2,65,434.75Tonnes).

With the present mineable reserves, the anticipated life of mine is 13 years. The reserves are estimated to almost land level situation, the depth of mining operations proposed during the present plan period is 12 m. Further, the ultimate depth of mining operations at conceptual stage is proposed upto a depth of 39 m. However, the proposed exploration may increase the life of the mine due to the increase in depth of the ore body.

A Crushing & Screening Plant with capacity @ 125 to 220 Tones/Hour is also envisaged in an area adjacent to the Mine Lease.

**Blasting-** Blasting is required for production of Limestone & Dolomite ore.

**Transport of Mineral-** Material will be transported by road from the mine to the Crusher Unit and thereafter to consumer industries as it is economical and speedy for short distances.

**Waste Generation and Management:** The entire lease area is mineralized. There is hardly any over burden or Top Soil/Waste in the area. Top Soil /Waste encountered, if any, will be stripped out from the area proposed for mining during the ensuing Plan Period and stacked in the area where mining is not immediately proposed or Soil needs to be re-handled. Removal of this material would not require any blasting and as such it will be removed separately with the help of excavator and shall be stored at designated place.

The Top Soil/waste encountered, if any shall be stacked at designated place within the Mining Lease Area. Proper Overburden Dump Management Plan shall be prepared if required. The height of the overburden dump shall be maximum 3.5 m. The dump shall be suitably sloped and shall be stabilized to avoid slope failure. As stated earlier, the quantity of Top Soil/ Waste if encountered is expected to vary

meager and corresponding dump height will also be small and stable; as such slope stability study is not felt necessary at this stage and has not been done presently.

The Limestone & Dolomite Rejects also have market and therefore would not require to be dumped. The same shall be supplied to the fertilizer and allied industry.

**Topography & Drainage:** The general topography of the area is slightly undulating to flat. A network of small seasonal nalas flowing to the north-east contributes towards the drainage of the area. Vaidarbh River is flowing about 3.5 Km along the North-Eastern boundary of block from north to south and joins Penganga River.

**Ground water:** During the current Plan period, the proposed excavations are not going to touch the ground water table as it observed to be below 15 m. Thus there will not be any contamination of the underground water because of the proposed mining. The water requirement for the proposed mine will be met from the bore well / dug well. There will be no discharge of waste water from the mine.

**Arrangement for Dewatering:** It is proposed to create a water sump of 3000 m<sup>3</sup> (100 x 10 x 3 m) capacity at the pit bottom within lease. Additional accumulation of rain water, if any will be allowed to remain in this sump until pumped out for its utilization to dust suppression and plantation.

Water requirement for dust suppression, plantation and vehicle washing will be met from rainwater collected in mining pit.

**Employment Potential:** Around 57 persons will be required for this mine. It is proposed to deploy local manpower meeting the eligibility criteria required for the job under consideration.

The industrial activity like mining will benefit people residing in the nearby villages within the buffer zone by direct and indirect employment opportunities. People will also be beneficiaries for the facilities developed due to mining activity.

### **BASELINE ENVIRONMENTAL STATUS:**

The total project area (14.63 Ha) of the Adegaoon Limestone & Dolomite Mine is considered as Core Zone while the 10 Km surrounding area of core zone is considered as Buffer Zone. Baseline environmental data was collected for all the components of environment like meteorology, air, water, noise, soil, geology, hydrogeology, flora-fauna, demographic and socio-economics, industries, places of archeological and historical importance etc. Standard guidelines prescribed by Ministry of Environment, Forests & Climate Change and Central Pollution Control Board were used for this study. The EIA report incorporates the baseline data generated through primary surveys for three months during October 2019 to January 2020 representing post monsoon season.

The environmental and socio-economic baseline data for one season (post-monsoon) has been generated for assessing and ascertaining present environmental scenario. The approved Environmental Management Plan and Environmental Clearance conditions will be implemented for protection of environment and control/ mitigate the pollution due to proposed mining activities.

In compliance of the EIA notifications, the prior environment clearance will be obtained before starting mine development and Limestone & Dolomite production.

**Landuse of the Buffer Zone:** As per census the total area estimated within 10 km radius of buffer zone (study area) around proposed Limestone/Dolomite block was 31400 Ha. The maximum area was under cultivation 6.65% (irrigated 2.83% and un-irrigated 63.82%). Followed by area under culturable waste land was 3.88%, area not available for cultivation was 6.76%. While area under forest was 22.72%. The Geocoded Satellite Imagery for the study area covering 10 Km study area was procured from National Remote Sensing Agency (NRSA), Hyderabad.

**Water Quality:** Total six surface & five ground water sampling stations were monitored in the study area. The analysis indicates that almost all parameters are within the prescribed limit.

**Air Quality:** The monitoring was carried out for 13 continuous weeks beginning from October-2019 to January-2020 as per norms stipulated by the Central Pollution Control Board. To assess the baseline ambient quality nine air quality monitoring location were

selected on the basis of wind direction and other meteorological parameters in core and buffer zone area.

**Air Quality:** The PM<sub>10</sub> PM<sub>2.5</sub> SO<sub>2</sub>, NO<sub>x</sub> values for all 9 stations were below.

- **Particulate Matter<sub>10</sub>:** The 24 Hourly concentration of PM<sub>10</sub> reported during the survey ranged from 43.6 to 81.9 ug/m<sup>3</sup>. This is lower than the NAAQ permissible level of 100 ug/m<sup>3</sup>.
  - The maximum PM<sub>10</sub> at all air quality monitoring station A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8 and A-9 are 81.9, 78.8, 75.6, 61.2, 43.6, 52.3, 49.1, 51.3 and 59.8 µg/m<sup>3</sup> respectively. All monitored stations have concentrations within limit.
- **Particulate Matter<sub>2.5</sub>:** The 24 Hourly concentration of PM<sub>2.5</sub> reported during the survey ranged from 26.9 to 48.8 ug/m<sup>3</sup>. This is lower than the NAAQ permissible level of 60 ug/m<sup>3</sup>.
  - The maximum PM<sub>2.5</sub> at all air quality monitoring station A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8 and A-9 are 46.8, 48.8, 44.8, 38.8, 28.8, 32.2, 26.9, 27.7 and 33.5 µg/m<sup>3</sup> respectively. All monitored stations have concentrations well within limit.
- **SO<sub>2</sub>:** The 24 Hourly concentration of SO<sub>2</sub> reported during the survey ranged from 13.6 to 28.4 ug/m<sup>3</sup>. This is lower than than the NAAQ permissible level of 80 ug/m<sup>3</sup>.
  - The maximum SO<sub>2</sub> concentrations at all sampling stations A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8 and A-9 are 28.4, 26.7, 25.8, 18.8, 13.6, 18.8, 17.0, 17.6 and 18.7 µg/m<sup>3</sup> respectively and these are even very less than stipulated limit recommended for sensitive area as in NAAQ Standards from MoEF.
- **NO<sub>x</sub>:** The 24 Hourly concentration of NO<sub>x</sub> reported during the survey ranged from 20.4 to 31.0 ug/m<sup>3</sup>. This is lower than the NAAQ permissible level of 80 ug/m<sup>3</sup>.
  - The maximum NO<sub>x</sub> concentrations at all sampling stations A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, and A-9 are 31.0, 29.1, 27.4, 26.7, 18.8, 24.8, 20.4, 22.8 and 20.9 µg/m<sup>3</sup> respectively. Concentration of NO<sub>x</sub> at all sampling stations are very less than stipulated limit recommended for sensitive area as in NAAQ Standards from MoEF.

**Noise Levels:** A noise survey for baseline levels of noise indicates that Recorded Noise Levels in the proposed lease buffer zone are in the range of 33.7 to 59.9 dB (A) at all nine monitoring stations. Maximum levels of noise have recorded in day hours which are natural as our most of activities have done in day hours. These **are well within prescribed limit** .

**Soil Quality:** Soil samples were collected at 4 selected locations in the study area to assess the existing soil conditions around the proposed mine. **Characteristic of Waste land soil is a little deficient in nutrients concentration. Whereas, all the soil sample agricultural land are moderately suitable for cultivation of climatic crops and have good fertility. Characteristic of forest land soil is sufficient in nutrients concentration.**

**Biological Environment:** The buffer zones include the village settlements with their cultivated fields, forest areas as well as vast areas reduced to wasteland. The detailed inventory of floral and faunal assemblage of the core and buffer zone has been prepared. The details of flora and fauna are provided in EIA/EMP. There are no ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the buffer zone.

**Human Settlement and Demography:** The area selected for the study constitutes 38 inhabited villages. The population is distributed among 8816 households in the study area. The inhabited villages have a population of 36771 comprising of 18674 males and 18097 females. The number of females per 1000 males is 969. The overall literacy in the villages of the study area has 81.00%. Provisional figures of Census 2011 were studied for this area. There is no major change in demographic, vocational profile besides normal changes as observed in other parts of the district.

**Proposed Social Responsibility Measures:** A systematic approach for the implementation of the peripheral area development in selected villages in the buffer zone for nearest village will be drawn up with the help of local community based organization & in consultation with the villagers. Assistance in the field of health and sanitation, environment conservation, water conservation, literacy, self help groups, development of infrastructure. A budgetary provision of Rs. 5.0 lakhs per annum as annual recurring expenses is proposed on this account.

**Risk Assessment & Disaster Management Plan:** In any mining project, work safety is taken care of as per provisions in the Mines Act, Rules framed there under. Inundation, fly rocks during blasting operations, risks associated with handling and use of explosives, during operations of equipment and movement of vehicles has been dealt. The risk management plan as per the directives of competent authorities will be Implemented strictly.



## ENVIRONMENT MANGEMENT PLAN

### **Air Pollution Management** :

- a) Haulage roads will be frequently sprinkled with water for which truck mounted water tankers with sprinkler arrangement have been provided.
- b) Ore will be covered by tarpaulins to prevent spread of dust from it during transportation.
- c) Regular maintenance of vehicles and machineries will be carried out in order to control emissions.
- d) Green belt development will be taken up at various places.
- e) The dust respirators will be provided to all the workers.
- f) Good housekeeping and proper maintenance will be practiced which will help in controlling the pollution.

**Water Pollution Management:** The mining project will require continuous supply of water for various purposes during mining, plantation etc. apart from drinking water supply. The main source of water pollution in opencast mining is the surface run-off due to rainfall. There will not be any mine discharge during dry weather seasons. There may be accumulation of rain water during monsoon season, which contains fine silt. This will be treated in settling tanks of adequate dimensions. The treated water (overflow) will be used for plantation and dust suppression.

### **Noise & Vibration Management**

- Noise is best abated at source by choosing machinery and equipment suitably, by proper mounting of equipment & ventilation systems and by providing noise insulating enclosures or padding where practicable.
- Proper maintenance of vehicles will be done which keeps the noise level within limits.
- At the boundary of mining lease green belt of local trees will be planted which will act as acoustic barriers. Planting of bushy trees of rich canopy in and around the mine area to intercept noise transmission. A 7.5 m wide belt of trees of different heights will be useful to act as noise attenuator in the mining areas.
- Delay detonators millisecond delay interval will be used. For keeping the vibrations minimum.

**Land Reclamation Measures:** The mining will be by semimechanized opencast method of mining. The ore reserves will last long even after the ML period expires, the same will be renewed for further period, hence question of back filling /reclamation does not arise at this stage. However it is proposed to carryout plantation in the non mineralized area on regular basis.

**Plantation:** It is proposed to select the local tree species with the help of forest department having 5 tier arrangements for implementation all along the mining lease in order to control dispersion of fugitive dust from the mining lease. To enhance the environment proposed afforestation programme will be carried out by planting 200 saplings per year, in lease area.

#### Plantation Schedule

YEARS	NO. OF PLANTS	AREA (Sq.m)
1 <sup>st</sup>	200	1800
2 <sup>nd</sup>	200	1800
3 <sup>rd</sup>	200	1800
4 <sup>th</sup>	200	1800
5 <sup>th</sup>	200	1800
<b>TOTAL</b>	<b>1000</b>	<b>9000</b>

#### Occupational health:

- All the mine workers will be sent to nearest Hospital which has the facilities for chest X-ray, pulmonary function test & audiometry, TB, Malaria, HIV etc. once in 5 year. Free Transport will be provided.
- It is proposed to supply treated water for drinking water for the mine workers.
- A safety committee will be constituted to implement the proposed OSHA management plan and environment management programme and take proper mitigative measures as per EIA/EMP.
- Services of Occupational Health Specialist will be arranged regularly.
- Individual health record of every worker will be maintained till the end of service or the end of mining operations.

**Employment Potential:** Around 57 nos. persons will be required for this mine. Managerial staff consisting of Mines Manager, Mining Engineers, Geologist, Mining foreman, mining mate and safety engineer will also be deputed. It is proposed to deploy local manpower meeting the eligibility criteria required for the job under consideration.

Due to industrial activity like mining; people residing in the nearby villages within the buffer zone are to be benefited by direct and indirect employment opportunities created by the mining activities. People are also beneficiaries for the facilities developed due to mining activity. A budgetary provision of 110 lakhs as capital investment has been made for this project.

The mitigation measures suggested above shall be implemented so as to reduce the impact on environment due to operations of proposed mining activities. In order to facilitate easy implementation, mitigation measures are phased as per the priority implementation. A separate budgetary allocation of the funds has been made for the environmental protection measures. The monitoring of the pollution to know the effectiveness of the applied control measures will be carried out at regular interval. A budgetary provision of Rs. 47.00 lakhs as Capital Cost and Rs 16.50 lakhs annual recurring expenditure is made in the management plan towards Environmental Pollution Control Measures .

## AN EPILOGUE

In compliance with the environmental procedure the environmental clearance application is made. Necessary scientific studies have been undertaken as per the guidelines set by the Ministry of Environment, Forests & Climate Change (MoEF&CC). The suggestions/recommendations of all the experts, competent authorities, and government officials are being sought for the impacts of the proposed project. Views and guidance of the local residents, community based organizations, social organizations are extremely important in order to devise a full proof Environment Management Plan for the proposed mining project and also mitigate the damages caused due to the project. Allocation of necessary funds, manpower and machinery will be made to for the protection and conservation of all the components of environment. It is ensured that all mandatory clearances will be sought from respective competent authorities before operating the proposed **Adegao Limestone & Dolomite Mine (14.63 Ha)**. The proponent takes the responsibility & is committed to implement the suggestions for the improvement of the environment and reassure that every attempt will be made for the conservation and protection of the natural resources to the maximum extent.