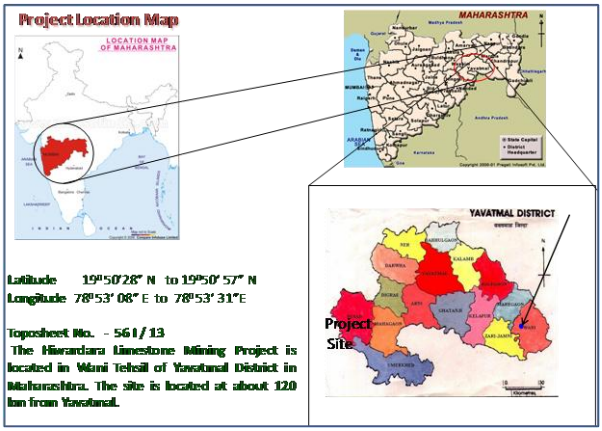
EXECUTIVE SUMMARY

INTRODUCTION: M/S Shree Bajarang Sales Pvt.Ltd is a Private Limited Company involved in mining of limestone/Dolomite which will be used for their own cement plant and part of the Limestone & Dolomite production from the area will be supplied to metallurgical industries to be used as flux material.

M/s. Shree Bajarang Sales Pvt. Ltd (SBSPL) has established a Cement plant near Maregaon Dist. Yavatmal, Maharashtra. In order to cater the need for limestone the company applied for the mining lease near village Hiwardara, Tahsil Wani, Yavatmal District, Maharashtra. The proposed Limestone mine (**171.09 hectares**) will be developed as manual opencast mine for the production of limestone @ **0.2 MTPA**. The project was appraised by Expert Appraisal Committee (EAC) during its **4th** meeting held during **20-22 February 2013.** Accordingly Terms of Reference (TOR) for undertaking EIA study has been prescribed by EAC (Mining MoEF), New Delhi. The EIA/EMP report is based on this TOR.

Location Details: Location of proposed limestone/Dolomite Deposit is given at figure which is given below.The applied M.L. area over 171.09 hectares is covered within the Survey of India toposheet No. 56 I/13 on a scale of 1:50,000 and is bounded by the latitude $19^0$50'28" Nto $19^0$50' 57" N and Longitude 78^0 53' 08" E to 78^0 53' 31"E.



Accessibility -The area is situated at a distance of about 27 kms from Wani and approachable by Wani–Patanbori road which is all weathered and tar surfaced. Distance from Nagpur to Wani is about 120 kms. Total distance from Nagpur to the area is 147 kms. The

approach road to the area and the mines are in good condition.

Existing Landuse-The applied mining lease area covers 171.09Ha consisting of 116.02 Ha Private land and 55.07 Ha Government land. The present land use is rain-fed agriculture and Government wasteland.

Geological formations & Ore Reserves: The regional geology of the area is represented by Penganga beds (Vindhyans), Gondwana formations, Lameta beds (Intratrappeans) and basaltic lava flows (Deccantraps). The total geological reserves of limestone and Dolomite are estimated to be 15.0 million tonnes while the mineable reserves are estimated to be 12.5 million tonnes. It is proposed to produce 0.20 million tonnes / annum of Limestone/Dolomite from this mine.

Mining Method: Mining will be carried out by manual opencast method. This includes removal of overburden, drilling by diesel compressors & jackhammer drills, blasting and removal of Limestone & Dolomite to the surface screening and sizing. The development consists of removal of an overburden, which occurs as a capping over Limestone & Dolomite. Presently there are two working pits in Limestone & one working pit in Dolomite. The mining operations will be continued after obtaining necessary permissions from these already broken areas. The proposed rate of ROM production about 2, 00,000 T/ Year for next five years and subsequent years of production when the mine is fully developed. With the present mineable reserves, the anticipated life of the mine is 66 years. The proposed exploration will increase the life of the mine due to the increase in depth of the ore body.

Waste Generation and Management: The development consists of removal of an overburden, which occurs as a capping over Limestone & Dolomite. The overburden in mining area is negligible or almost absent. The soil will be removed during excavation is given in the following Table.

YEARWISE TOP SOIL GENERATION

YEARS	Soil In Cu.m.	
	In Limestone area	In Dolomite area
2010-11	3165	4621.5
2011-12	726.5	1379
2012-13	2107	3360.5
2013-14	401.5	Nil
2014-15	910.5	1193
TOTAL	**7310.5**	**10554**

The waste and rejects will be dumped in non mineralized zone within the mining lease. Dumps after stabilization will be biologically reclaimed. There is no proposal for storage of overburden outside the mining lease area.

Drainage: Hiwardara block is not drained by any perennial streams. However,in the buffer zone there are some small seasonal nallahs originating from the western and southern high grounds ultimately join Vaidarbha Nadi towards east, which controls the drainage of the area. This tributary eventually meets the Penganga River, which is the main drainage of the area. Vaidarbh River is flowing 1 km away from the lease area in North East direction. Penganga River is at 6.0 km in South East. Mukutban tank is there in South west direction which is also at 6.0 Km from the lease area.

Ground water: 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^3 (100 x 10 x3 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.

BASELINE ENVIRONMENTAL STATUS:

The total project area of the proposed **Hiwardara 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 and Central Pollution Control Board. The EIA report incorporates the baseline data generated through primary surveys for three months during March 2013 to May 2013 representing summer season.

Landuse of the Buffer Zone: As per census the total area estimated within 10 km radius of buffer zone (study area) around proposed Limesone/Dolomite block was 31400 Ha. The maximum area was under cultivation 66.65% (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.

Ground Water Level: Well inventory of 53 numbers dug wells in 28 villages had been done in the buffer zone.The water level in buffer zone during pre-monsoon is varies between 3.2 to 11.7 m bgl average 6.43 m bgl, while during post monsoon it is 0.82 to 7.70 m bgl average being 3.07 m bgl. The average water level fluctuating between two extreme seasons is 3.37 m.

Water Quality Monitoring: The water quality monitoring stations were selected with a view to represent the surface and ground water bodies in and around proposed lease area. There are number of seasonal nallahs and there is

no perennial stream in the buffer zone. The stations were selected taking all these water courses into account, as per MoEF norms. A total of five surface & five ground water sampling stations were monitored. The analysis of physico-chemical characteristics of the water samples one season are appended in Chapter 3 of EIA/EMP.

Ambient Air Quality Monitoring: The monitoring was carried out for 13 continuous weeks beginning from March 2013 to May 2013 as per norms stipulated by the Central Pollution Control Board. To assess the base line 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_{10} $PM_{2.5}$ SO_2, NOX values for all 9 stations were below.

- **Particulate Matter$_{10}$**: The 24 Hourly maximum concentration of PM_{10} reported during the survey ranged from 42.1 to 54.8 *ug/m^3.* This is lower than the NAAQ permissible level of 100 *ug/m^3.*
- **Particulate Matter$_{2.5}$**: The 24 Hourly maximum concentration of $PM_{2.5}$ reported during the survey ranged from 21.3 to 31.2 *ug/m^3.* This is lower than than the NAAQ permissible level of 60 *ug/m^3.*
- **SO_2**: The 24 Hourly maximum concentration of SO_2 reported during the survey ranged from 9.9 to 20.5 *ug/m^3.* This is lower than than the NAAQ permissible level of 80 *ug/m^3.*
- **NO_x**: The 24 Hourly maximum concentration of NO_x reported during the survey ranged from 11.9 to 27.2 *ug/m^3.* This is lower than than the NAAQ permissible level of 80 *ug/m^3.*

Noise Levels: A detailed noise survey was undertaken to study the baseline levels of noise, noise levels are in the range of 35.1- 46.8 dBA at all 9 stations. These are low and well within limit prescribed for residential area.

Soil Quality: Soil samples were collected at 4 selected locations in the study area to assess the existing soil conditions around the proposed mine. Overall soils are moderately suitable for cultivation of arable crops and have moderate fertility.

Biological Environment: The core and buffer zones include the village settlements with their cultivated fields, forest areas as well as vast areas reduced to wasteland. Flora-Fauna: 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 15 km area of the buffer zone.

Human Settlement and Demography: The area selected for the study constitutes 46 inhabited villages. The population is distributed among 9769 households in the study area. The inhabitated villages have a population of 43089 comprising of 21977 males and 21072 females. The number of females per 1000 males is 958.The overall literacy in the villages of the study area has 70.85%.

Proposed Social Responsibility Measures: The details of proposed social responsibilities are given in Chapter 4. A systematic approach for the implementation of the peripheral area development in selected villages in the buffer zone starting from the 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 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.

ENVIORNMENTAL 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 house keeping 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, vegetation 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. The treated water (overflow) will be used for plantatin 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/working 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 opencast method of mining. The ore reserves will lost 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.

Proposed Afforestation Programme

Period	Greenbelt on Safety Area and ML Boundary	
	Ha	No. Saplings
At the end of 5th year	3.34	5000
At the end of 10th year	10.00	15000
At the end of 15th year	16.67	25000

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, Maleria, 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.
- The proponent will bear all the expenditure related to health check up and treatment of the mine workers.
- Individual health record of every worker will be maintained till the end of service or the end of mining operations. Records will be maintained and corrective action if required, shall be taken by the management Budget has been allocated under Recurring Annual Cost for Environmental protection

Employment Potential: Around 127 labours will be required for this mine. Managerial staff – 2 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.

Resuming of 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 beneficiaries for the facilities developed due to mining activity. A budgetary provision of Rs 2 lakhs as capital investment and recurring expenditure of Rs 5 lakhs is made in the management plan.

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 is 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.

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 and Forests (MoEF). 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 **Hiwardara Limestone/Dolomite Mine (171.09 Ha)**. We at **M/s. Shree Bajarang Sales Pvt. Ltd (SBSPL)** are committed to implement the suggestions for the improvement of the environment and assure that every attempt will be made for the conservation and protection of the natural resources to the maximum extent.