



EXECUTIVE SUMMARY

of

ENVIRONMENTAL IMPACT ASSESSMENT

for

PUBLIC HEARING

of

M/s. GANESHPUR LIMESTONE & DOLOMITE MINE

(Lessee - Shri. Gulab M. Gedam)

Gat. No. 28, Village - Ganeshpur,

Tahsil - Zari-Jamani,

Dist. - Yavatmal,

Maharashtra .

October, 2013



Executive Summary

of

Environmental Impact Assessment Report

1.0 Introduction

M/s. Ganeshpur Limestone & Dolomite Mine (Lessee - Shri. Gulab M. Gedam) has limestone & dolomite mining lease over an area of 26.00 Ha at Gat. No. 28, Village - Ganeshpur, Tahsil - Zari-Jamani, Dist. - Yavatmal.

Mining lease area is a non-forest, barren, govt. revenue land. Maximum production planned from this ML area is 10,00,000 tonnes per annum. The limestone and dolomite produced will be supplied to cement, steel and lime manufacturing units and other associated industries.

The proposed mining project is listed in EIA Notification, 2006 & Amendments there off under Sr. No. 1(a) as category B project and requires Environmental Clearance from SEAC & SEIAA, Environment Department Govt. of Maharashtra.

The Environment Department, Govt of Maharashtra in its 40th SEAC Meeting dtd 17th February 2011 and 72nd SEAC Meeting dtd 3rd July 2013 has granted Terms of References (TOR) to the proposed limestone & dolomite mining project of M/s. Ganeshpur Limestone & Dolomite Mine. In the SEAC minutes it is advised for carrying out EIA as per Model TOR and then to conduct a public hearing.

Earthcare Labs Pvt. Ltd., Nagpur has collected environmental baseline data in 10 km radius study area during Summer Season of 2013 (11th March 2013 to 9th June 2013) was used for the Environmental Impact Assessment Studies for the proposed mining activity and prepared detailed EIA report as per model TOR. The summarized details of EIA are given in subsequent sections.

2.0 Mine site

The ML area lies between the latitude 19°50'33.14" N to 19°50'57.96" N and longitude 78°52'45.48" E to 78°53'07.10" E. Topographically, ML area is flat and its altitude varies from 229.0 M to 235.0 M from mean sea level.

The nearest village Ganeshpur is located at a crow fly distance of about 1.05 km in SSW direction from mine site. The nearest town Wani is located at a crow fly distance of about 23 km in N-NE direction. Nearest Railway Station is about 6.6 km in N-NE direction. Nearest State Highway No. 234 is about 0.8 km in South direction.

There are no National Parks, Wildlife Sanctuary, Notified Forests, Mountains, Hill Stations, Historical Monuments, Defense Installation etc. in the study area of 10 Km radius of the proposed mine. The nearest Ruikot reserved forest is about 2.5 km towards West direction as crow flies.

The general drainage pattern is towards SE direction. Nearest river Vaidharbha is about 3.2 km away as crow flies in NE direction. Nearest Lallya Nala is about 1.5 km towards North direction as crow flies.

Study area comes under Zone II of the Bureau of Indian Standards (BIS) 2000 Seismic Zone Map for India. Zone II is defined to be seismologically least to moderately active, thus, study area is seismologically safe.

At the end of the life of mine, about 16.0 HaR area will be converted to water storage pond & approach roads. The area under green belt will be 9.5 HaR (1.5 HaR along the ML boundary and backfilled area of 8.0 HaR will be converted to green belt). 0.5 HaR will be utilized as in infrastructural facilities for security, office, first aid station etc.

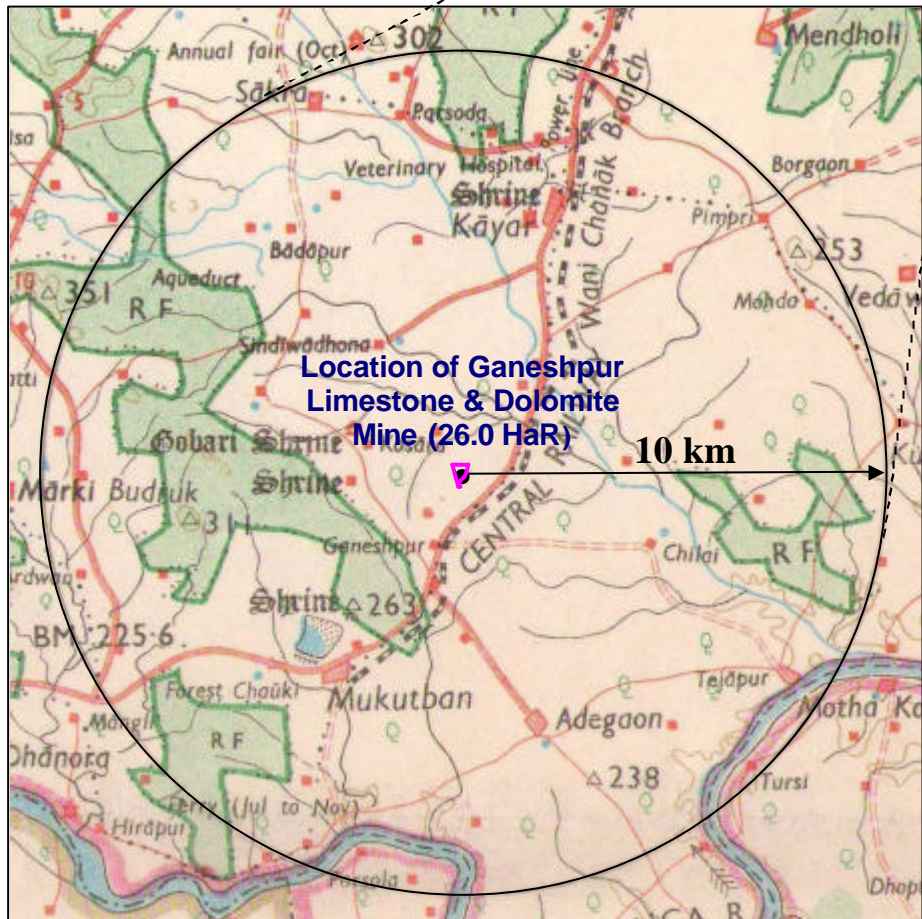
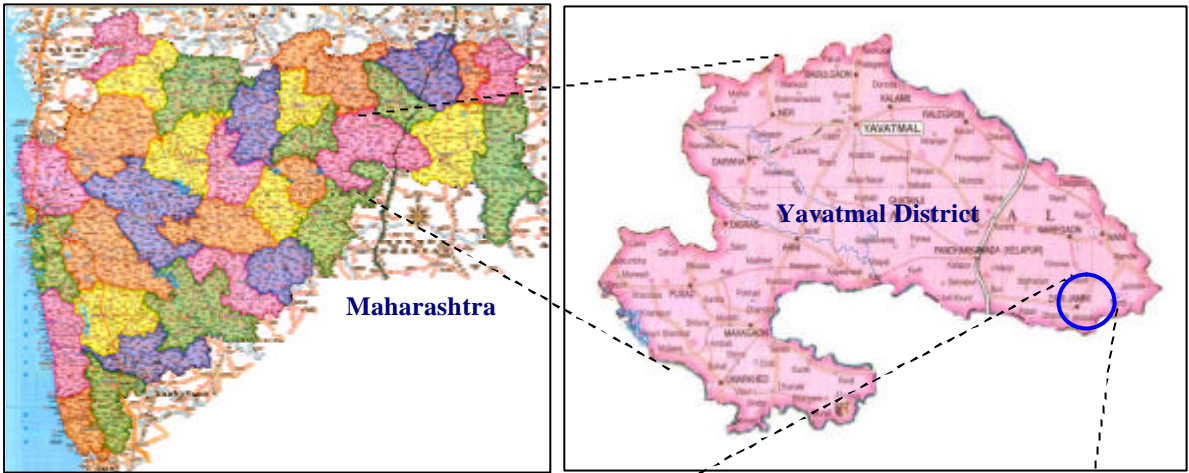
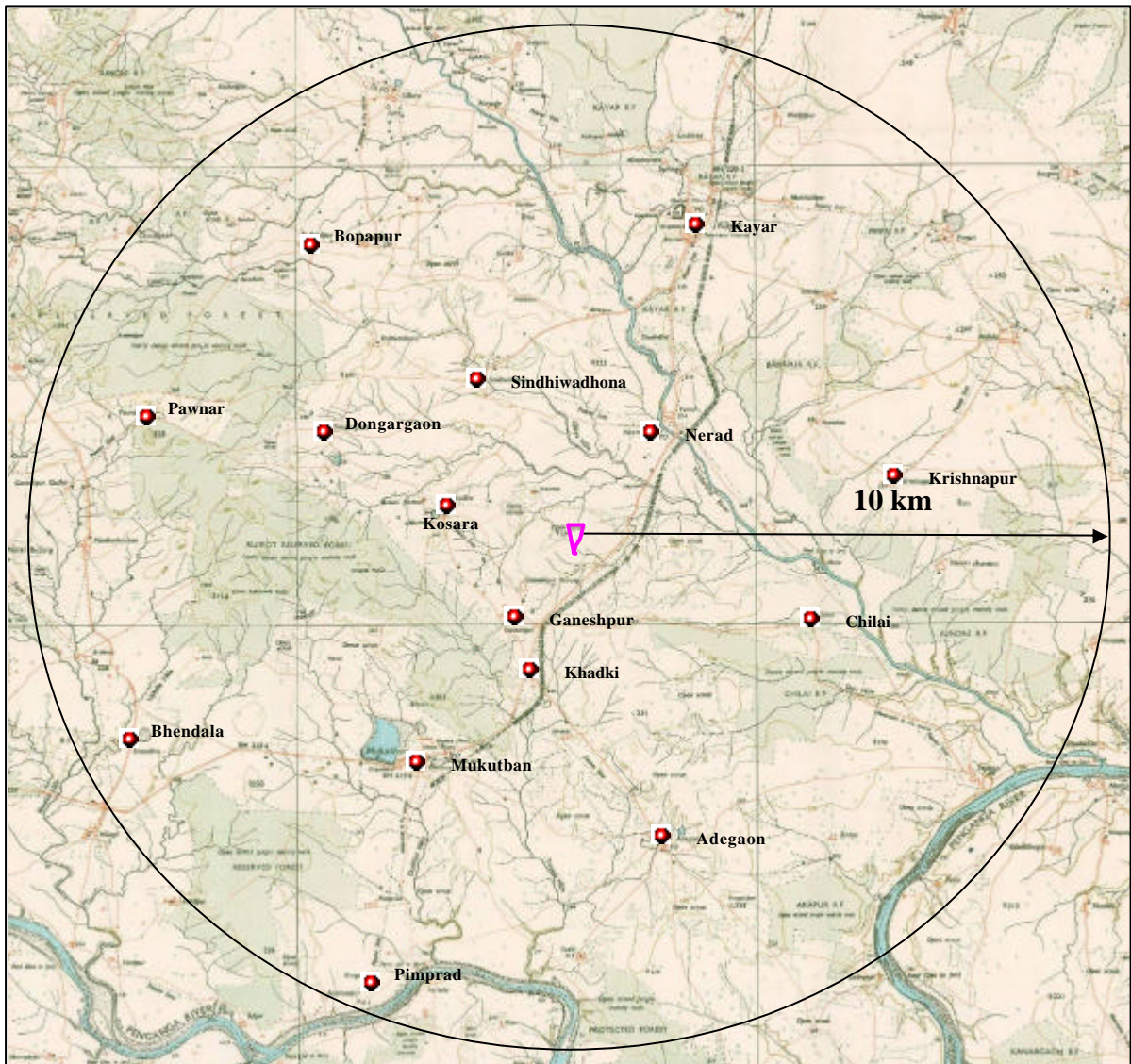


FIG . : LOCATION MAP OF MINE



Toposheet No. 56 I/13

Legends:





	Mining Area		River		Road		Forest
	Village		Contour		Railway		

FIG. : MAP OF 10 KM RADIUS STUDY AREA SHOWING TOPOGRAPHIC FEATURE

3.0 Mining Details

3.1 Salient Features of the Mine

In the mining lease area of 26.0 HaR, total mineral resources are estimated to 117 lacs tones, out of which available mineable reserves are estimated to 94.41 lacs tones when entire thickness of the body is considered. As per UNFC classification when thickness of the exposed ore body is considered, total mineral resources comes to about 44.87 lacs tones. Graded limestone and dolomite @ 10,00,000 tonnes per annum will be mined out by OTFM method and Run of Mine (ROM) will be @ 11,00,000 tonnes per annum.

The capital investment of the project is estimated as Rs. 475 Lakh. During development & operation of mine, about 65 persons including technical, administrative and skilled & semi-skilled staff will get direct and indirect employment. Local people will be given priority in employment.

3.2 Mining Method

The major operation of mining will be Drilling, Blasting, Crushing, Screening, Loading etc. Drilling and blasting will be carried out through modern techniques. The drilling will be carried out by compressed air operated Wagon / DTH Drills. The controlled blasting will be carried out using slurry emulsion explosives, site mix emulsion explosives, detonators etc. with required safety measures. The depth of holes will be 6.0 m, while spacing and burden will kept as 4 m and 3 m respectively and maximum number of holes required to be drilled per week will be upto 87 considering full production capacity. The powder factor will range from 8.0 to 10.0 tonnes/kg of explosives.

Blasting will be carried out during specified time between 12 noon to 2 pm. Blasting will be carried once in a week for two times at an interval of one hour. Alarm will be given before blasting and it will be ensured that no manpower or animals are near to blasting area. The most advanced technology will be used for blasting and experienced personnel will be appointed for the purpose.

The blasted ROM will be removed mechanically. The removed material will be then crushed & screened to appropriate size. Reject material will be shifted mechanically using excavator cum loader or JCB & tractor/truck/tipper combination to the dumping site to be developed all along the boundary of the mine pit. Water will be sprayed on the dumps and compacted with development of green belt.

Sized Limestone & Dolomite will be loaded on to the trucks or tippers either manually or mechanically for onward dispatch to the end users.

4.0 Baseline Environmental Status

The baseline environmental status of the study area covering 10 km radius around the mine site with reference to the prominent environmental attributes has been carried out in the Summer Season of 2013 (11th March 2013 to 9th June 2013). The salient features of various environmental components are given hereunder.

4.1 Land Environment

Land environment baseline studies have been carried out to establish physiography, geology, land use pattern, solid & hazardous waste status and soil quality.

Topography of the study area is relatively plain having no hills or valley in the immediate vicinity of mine site.

In the lease area and surrounding area, the limestone is fine grained, massive, ash grey to blackish in colour. The structure of the limestone is fairly simple with nearly horizontal beds. The limestone is well jointed with most joints filled with calcareous /clay matter. The dolomite deposits are medium to coarse grained with brownish shade in color. These minerals are covered with 0-0.3 m thick soil mantle. The calcareous rocks comprising, mostly dolomite, limestone & dolomitic-limestone belonging to Penganga beds of Pakhal Group of Precambrian age.

The Land use and land cover analysis of study area carried out using satellite imagery delineate that agriculture land covers 69.55 % area and forest land includes 11.18 % area. Waste land covers 16.41 % area and built up area covers 0.86 %.

Soil sample were collected from seven sampling locations in the study area. The soil texture in the study area is predominantly clay loam. The cultivable soils are spread over in the study area which as per the soil quality analysis shows nutrient deficiency. Permeability of the area is low & bearing strength (compressive strength) is moderately high.

4.2 Biological Environment

The primary field surveys (field studies, interaction with villagers & forest visits) at ten locations and analysis of secondary data has been carried out to assess the biological environment of the study area.

The dominant trees observed and reported during primary survey in the study area were Babhul, Kaduneem, Palas, Subabhul, Chinch, Sagwan, Bor, Mohu etc. The dominant shrubs in study area were Rui, Tagar, Beshram, Ghaneri, Tulsi, Nirgudi, Petari, Bharati, Jangli Babhul etc. The common herbs found and reported by villagers in the study area were Tarota, Piwla Dhotra, Dhotra, Kambarmodi, Sadaphuli etc. The dominant grasses observed and reported in the study area were Durva and Gajar Gavat.

There is no National Park, Wildlife Sanctuary, Notified Forests, eco-sensitive areas falls in the study area. As per revised survey of the Forest types of India by H. G. Champion & S.K. Seth the forest type is Group 5A Southern tropical dry deciduous forest. The notified Tadoba Andheri Tiger Reserves is about 48 km towards ENE direction and Tipesher Sanctuary is about 37 km towards WSW from buffer zone boundary of the study area.

The dominant mammals observed and reported during primary survey were mongoose, common mouse, common house rat and fruit bat.

Aves dominantly observed and reported during primary survey were House Sparrow, Black Mayna, Grey Myna, Asian koel, Little Erget, Parrot and Bulbul. Amphibian like common frog and aquatic species like Rohu and Waghur were observed and reported

No rare, endangered, endemic floral & faunal species were observed and reported in the study area.

4.3 Air Environment

Air environment baseline status of the study area has been monitored at nine sampling locations & micrometeorological data has been collected.

Wind Rose of Summer Season 2013 indicates that the wind pattern has prevailing winds from WNW & NNW directions. Wind Rose of May 2013 indicates that the wind pattern has prevailing winds from WNW direction.

The maximum concentration of PM₁₀ at different AAQM stations have been observed to be varying in the range of 47.30-78.40 µg/m³. The maximum concentrations of PM_{2.5} have been observed to be varying in the range of 26.50-53.40 µg/m³. The maximum values of SO₂ were

observed to be in the range of 8.70-24.30 $\mu\text{g}/\text{m}^3$. The maximum values of NO_2 varied between 20.50-32.20 $\mu\text{g}/\text{m}^3$.

In the study area, the maximum concentration of these parameters are observed to be within the ambient air quality standards promulgated by CPCB for residential/rural area.

4.4 Noise Environment

During summer season 2013, background noise levels (Leq) have been monitored in the human settlements within the study area of 10 km radius.

From the monitoring survey of noise levels it was observed that the day time noise levels were observed in the range of 42.8 dB (A) to 50.0 dB (A) in the residential area. The night time noise levels were observed in the range of 35.8 dB (A) to 39.2 dB (A) in the residential area.

The values are found to be within the day and night time standards prescribed for residential zone.

4.5 Water Environment

In the study area, the drainage pattern is dendritic type with moderate density. Some part of Vaidharbha River and Lallya Nala are flowing through the study area.

In the study area, normally ground water is used for domestic and agricultural purposes. The ground water in this region is extracted through dugwells and borewells.

Total water requirement will be about @ 40.0 m^3/day . Water requirement for domestic purposes will be @ 5.0 m^3/day , for spraying on haulage roads & crushing area will be @ 20.0 m^3/day , for processing @ 5.0 m^3/day and for green belt purposes @ 10.0 m^3/day . Water requirement will be met from existing borewells and rainwater harvesting pits.

For assessing the impact on water environment in the 10 km radius study area, three surface water samples and six ground water samples have been collected and analysed.

In surface water samples, pH is found between 7.67- 7.82 which indicate its alkaline nature. Total dissolved solids are found to vary between 83.8-568.0 mg/l and total hardness is found to vary between 52.82-396.18 mg/l.

In ground water samples, pH is found in the range of 7.38-8.32, indicating desirable range required for potability. Total dissolved solids are in the range of 250.0-1588.0 mg/l. Total hardness is found in the range of 245.2-1048.9 mg/l. The total hardness is found within the permissible limit. The metals analyzed namely Arsenic, Manganese, Lead, Copper, Cadmium, Zinc, Nickel and Chromium are found below the permissible limit.

However, some of the water samples from surface as well as groundwater sources are found to be bacteriologically unfit for drinking purposes.

Thus, it can be concluded that surface & ground water quality in the study area is physico-chemically fit for drinking purposes. However, chlorination treatment is required for making water bacteriologically safe for drinking purposes.

4.6 Socio-economic Environment

Baseline data such as demographic pattern, occupational status, educational, health, infrastructure and other amenities as existing in the study area have been studied.

The socio-economic profile of the people in the study area is given within 2 km, 2-5 kms and in the 5-10 km radius of the mine site. In the study area, 3 villages are coming within the 2 km radius of the mine site, 9 villages are coming in 2- 5 km radius and 34 villages are included in the 5-10 km radius of the mine site. All the villages are from Zari Jamani and Wani tehsil of Yavatmal district.

According to 2011 census, the study area of 10 km radius covers 46 villages. Total population of all the villages is 47043 out of which males constitute 50.85 % and females constitute 49.14% of the population. There are 11585 households in the study area with the population density of about 158 persons per residing in one square km area.

Occupational pattern of the study area shows that only 53.98% of the total population comes under the main workers category. Other categories are marginal workers about 4.85 % and non workers about 26.72 %.

5.0 Environmental Impact Assessment & Mitigation Measures

5.1 Land Environment

There will be no toxic and hazardous element present in the waste material and there will not be any hazardous wastes generation from mining activity.

The mining will generate top soil and mine rejects which will be used for development of dump along mine periphery. At the closure of mine, part of the pits will be backfilled by reject material and leveled by top soil. The reclaimed area will be stabilized by green belt. The remaining excavated pit will be developed as natural water reservoir.

Mine boundary will be stabilized using suitable plant species and grasses. This will stop erosion and leaching in rainy season.

To improve the environmental quality of excavated mine lease area, thick green belt will also be developed. Thus, land environment would not be adversely affected.

5.2 Biological Environment

A well planned green belt as per CPCB guidelines will be developed on the open land available for the purpose of improving the environmental quality as well as visual aesthetics of the lease area.

About 9.5 Ha of land will be progressively developed into green belt till mine closure. About 1100 saplings will be planted in year of commissioning along the ML boundary and subsequently in 5th year about 2200 plants on the backfilled area on the western side of the lease area. About 2200 saplings will be planted in 6th, 7th and 8th year. More 550 Plants will be planted at the closure of mine. The harvested rain water will be used for green belt development. Tree species to be planted are Amaltas, Arjun, Ashoka, Bakul, Hewar, Kanhera, Karanj, Khair, Kunti, Neem, Palas, Pipal, Saptparni, Sisam, Vedibabhul etc and Shrubs species to be planted are Tulsi, Nirgudi, Erandi, Ghaneri, Jaswand, Chillari, Sida, Sadaphuli and Ixora.

Thus biological environment will not be affected.

5.3 Air Environment

During mining operations, emissions from the mining machinery & transportation vehicle due to combustion of fossil fuels mainly diesel will be emitted out in the atmosphere. All the machinery will be maintained in good condition to minimize emissions and will be under control.

Fugitive dust emissions from mining operations as drilling, blasting, excavation, crushing, screening, transportation etc, will be controlled by use of advanced machinery, water sprinkling, compaction of haulage roads, covering of trucks/tippers.

As per ISCST-3 model, maximum incremental concentration of PM₁₀ predicted at a distance of 2.2 km in SSE direction was 2.5 µg/m³ in worst condition during operational phase of proposed mining activity.

As per studies, the baseline maximum ground level concentration of PM₁₀ monitored within mine site was 48.6 µg/m³ which will increase by 1.035 µg/m³ in worst condition during operational phase of proposed mining activity and maximum total maximum ground level concentration of PM₁₀ will be 49.635 µg/m³.

As per studies, the baseline maximum ground level concentration of PM₁₀ monitored at Ganeshpur village (Monitoring Station at 1.20 km in SSW direction of mine site) was 66.30 µg/m³. It will increase by 0.196 µg/m³ in worst condition during operational phase of proposed mining activity and hence maximum total ground level concentration of PM₁₀ will be 66.496 µg/m³.

During mine operation, wet drilling and non electric controlled blasting techniques will be used. Scientific development of dumps will be carried out. All the mining machinery & crusher will be maintained in good condition.

Thus, during the mining operations, there will not be any adverse impact on air environment.

5.4 Noise Environment

The Ganeshpur village boundary is near to proposed mine site at about 1.05 km in SSW direction. During day time, the measured noise levels at Ganeshpur Village in residential area was found to be 43.3 dB(A).

The expected maximum noise level during day time at Ganeshpur Village considering the impact of mining and transportation activities on residential area will be 44.44 dB(A). Thus, ambient noise quality of the Ganeshpur Village will meet the norms.

Mitigation measures for control of noise & vibration include attenuation at source, attenuation in transmission path, protective measures in work environment.

Insulating caps and machinery aids will be used at mine machineries. Shock absorbing techniques will be adopted to reduce impact energy. Controlled blasting has been planned to ensure low noise & vibration during mining operations.

Vehicular traffic will be regulated and allowed during day time only. Planting of bushy trees of rich canopy and trees of different heights in and around the mining lease area to intercept noise transmission.

Use of ear plugs/ear muffs will be made compulsory to workers using heavy machinery. DGMS Rules will be strictly followed during mining.

Hence, it can be inferred that during the mining operation the noise quality of the environment will not be affected.

5.5 Water Environment

At the mine lease area, water table is below 20 m and during mining it will not be intercepted. At full mining capacity, domestic effluent generation will be @ 4.0 m³/day and it will be treated in septic tanks and soak pits.

Industrial effluent generation will be nil and clear water collected in mine pit will be utilized for dust suppression, wet drilling and greenbelt development in the lease area. If required, harvested water will be supplied to villagers for agriculture purpose in the surroundings during scarcity.

Mitigation measures will be implemented effectively. Storm water of the mine lease area will be diverted through garland drains. Rainwater harvesting using non working pits will be carried out.

Thus, there will be no negative impacts on water environment of this area due to proposed mining activity.

5.6 Socio-Economic Environment

Agriculture is the main income source of the people in the study area. Majority of main workforce are engaged either in the cultivation in own land and/ or laboring activities in other agricultural land owners.

During the mining activity preference in employment of workforce will be given to mostly the local population as per their skills and qualifications.

The mine management will take part in community welfare activities related to sanitation, health checkup camps, environmental awareness programmes and social harmony, etc. Tree plantation programmes will be organized in the nearby villages.

Evaluation of socioeconomic profile of the study area as well as socio-economic survey of the region has revealed that the mining activities will result in: (i) generation of direct employment to certain extent and indirect employment to local people, (ii) increase opportunities for auxiliary & ancillary business, (iii) increase in revenue to the State Government.

It can be concluded that due to the proposed mine even though the social impact will be of marginal level, the impact will be positive and it will further improve the socio-economic status of the study area to a certain extent.

6.0 Environmental Monitoring Programme

The mine management has planned extensive pollution control and environmental conservation measures with a capital investment of Rs 34.25 Lacs and recurring budget of Rs. 9.1 Lacs per annum.

Effectiveness of pollution control measures adopted for mining will be regularly checked under Environmental Monitoring Programme.

The location of sampling, frequency & analysis of environmental attributes will be as per the guidelines of CPCB / MPCB.

7.0 Additional Studies

As per EIA Notification, 2006, the points raised during public consultation towards their compliance will be incorporated in the final EIA report. Environmental Public Consultation is useful in decision making process and it will be carried out after the MPCB in consultation with Collector office will declare the date and venue of public consultation within a month through newspapers.

The issues raised during the public hearing will be answered by project proponent and submitted the further action in the matter.

Risk to the environment in the proposed limestone mining is insignificant. All the activities related to mining will not account for any major risk factors except for blasting operation. Only controlled blasting will be carried out under supervision of Asst. Manager & qualified blaster.

In case of emergency, Disaster Management Plan has been prepared to organise and co-ordinate all activities prior to, during and after occurrence of an emergency till normalcy is restored. First aid medical facilities, fire fighting facilities, transport vehicle, communication facilities will be available at mine site. Lessee has planned to handle effectively any possible emergency.

Social impacts assessment studies revealed that there will be no land acquisition, resettlement, rehabilitation and compensation in the proposed mining project, there will not be any major changes in the occupation structure of the area, there will be no traffic congestion. It is anticipated that the project would bring benefits to the people of the proposed mine surrounding villages.

Mine management will take part in community welfare activities related to health, hygiene and sanitation improvement, water conservation program i.e. rain water harvesting pits, community capacity building, education books & aids distribution and distribution of seeds.

8.0 Project Benefits

Proposed limestone and dolomite mining will help to fulfill the demand of this material to certain extent. The major benefit in terms of employment generation in the study area will increase, also nearby grampanchayats will start getting the regular tax from the mine. The proposed mine will produce an opportunity of reliable and constant source of income. The mining activity will help to improve the infrastructure and standard of living of the people in the nearby area.

9.0 EMP Execution Cell

The experienced personnel in environmental management and pollution control will be appointed on contractual basis and environmental monitoring activities will be carried out through MoEF approved laboratory.

The EMP Execution Cell will be headed by the Mine Co-Coordinator and he will be assisted by the personnel from different levels. Mine Manager, Mine Engineer, Foreman, Geologist, Environmental Consultant & Horticulturist (On contract basis), HR Manager, Plantation staff will be integral part of the EMP execution cell and will be responsible for the effective implementation.