

EXECUTIVE SUMMARY

(In English & Hindi)

Of

Draft EIA/EMP Report

For

PROPOSED LIMESTONE MINING PROJECT OF M/S. JAGDAMBA SPONGE PRIVATE LIMITED, SHRI NITIN SINGHAL AND SMT. TULSI BASANT IN GUDELI LIMESTONE MINING CLUSTER VILLAGE, GUDELI: TEH.SARANGARH, DISTRICT RAIGARH, CHHATTISGARH

(Submitted for Public Consultation as per EIA Notification 2006 & its subsequent amendments till dated)

Total Mining Lease Area: 8.875 Ha

{(2.26 ha. (M/S. Jagdamba Sponge Private Limited) + 3.113 ha. (Sh.Nitin Singhal) + 2.836 (Smt. Tulsi Basant)},

Total Area of Gudeli limestone mine cluster-46.164

Total Production Capacity: 455928.76 TPA (ROM)

{(1,10,829.38 (M/S. Jagdamba Sponge Private Limited) + 1,75,061.25(Sh.Nitin Singhal) + 1,70,038.13 (Smt. Tulsi Basant)}

Total Project Cost: Rs. 269.01 Lakhs

Category-B1

In Favor of	Prepared By
M/S. JAGDAMBA SPONGE PRIVATE LIMITED SH.NITIN SINGHAL SMT. TULSI BASANT	M/S. Aseries Envirotek India Pvt. Ltd (QCI/NABET Accredited Consultant), B-107, B Block, Sector 6, Noida, Uttar Pradesh 201301 E -mail: aseries.envirotek@gmail.com Contact- 0120- 4213298 +91-9990366186

Table of Contents

1	Executive Summary.....	3
1.1	Introduction and Background.....	3
1.2	Location and Communication	4
1.3	Project Chronology till Date.....	5
1.4	Project Description	5
1.4.1	Study Area at a Glance	5
1.4.2	Utilities	5
1.4.3	Topography and Drainage.....	6
1.4.4	Local Geology.....	7
1.4.5	Mineable Reserve & Life of Mine.....	7
1.5	Life of Mine	7
1.5.1	Mining Method.....	8
1.6	Meteorology Long Term Meteorology (Secondary Data).....	9
1.6.1	Temperature	9
1.6.2	Wind.....	9
1.6.3	Rainfall	9
1.6.4	Relative Humidity	9
1.6.5	Site Specific Meteorology.....	9
1.7	Existing Environment Scenario	9
1.7.1	Land Use.....	9
1.7.2	Soil Quality.....	10
1.7.3	Ambient Air Quality	10
1.7.4	Noise.....	10
1.7.5	Water Environment	10
1.7.6	Cropping Pattern	Error! Bookmark not defined.
1.7.7	Socio Economic Status	11
1.7.8	Impact on Air Environment	11
1.7.9	Impact of Traffic Density:.....	11
1.7.10	Impact on Noise Environment.....	11
1.7.11	Impact on Water Environment	12
1.7.12	Impact on Flora and Fauna	13
1.7.13	Impact on Top Soil.....	13
1.7.14	Impact on Socio Economic Status.....	13

1.8	Environment Monitoring Program.....	13
1.9	Additional Studies	13
1.9.1	Risk Assessment and Disaster Management Plan.....	13
1.10	Environment Management Plan	14
1.11	Project Benefits	14

1 EXECUTIVE SUMMARY

1.1 Introduction and Background

The Gudeli Limestone mine cluster is located at a distance ~1.20 km, towards west direction from Gudeli village. The District Headquarter Raigarh is ~31.0 km in North East direction and Chhattisgarh State Capital Raipur is ~170.0 km in SE and is connect by good tar road.

Quarry Plan, EMP & Quarry Closure Plan of **M/S. Jagdamba Sponge Private Limited** has been approved by Dy. Director (Mineral Admin.) Raigarh, (C.G.) vide letter No.: 909/KHA. LI.-2/2021 Raigarh, Dated: - 21/05/2021, Quarry Plan, EMP & Quarry Closure Plan of **Shri Nitin Singhal** has been approved by Mining officer Raigarh vide letter No. 18 A / Kha.li. - 2 / 2020 Raigarh dated 04/01/2021, and Quarry Plan of **Smt. Tulsi Basant** has been approved by Mining Officer, Raigarh vide letter No. : 17A/Kha.li-2/2020 Raigarh dated :- 04/01/2021

Letter of Intent has been issued in favor of M/s. Jagdamba Sponge Private Limited (Director: Shri Shiv Agrawal), R/o:- House No. 484, Ward No. 01, Jagdamba Villa, Kotra Road Raigarh (C.G.). vide letter No. 854/KHA.LI. - 1/2021 Raigarh, dated: 01/05/2021, Letter of Intent has been issued in favor of Shri Nitin Singhal S/O Shri J.P. Singhal, R/o:- Kotwali Thana Road, Village/P.O.- Raigarh, Tehsil & District- Raigarh (C.G.). vide letter No.4823/ kha.li – 1 / 2020 Raigarh dated 9/11/2020 and Letter of Intent has been issued in favor of Smt. Tulsi Basant W/o Shri Vijay Basant R/o:- Village:- Gudeli, Tehsil:- Sarangarh, District:- Raigarh (C.G.) vide letter No. 4824/Kha.Li.-1/2020/ Raigarh dated: 09/11/2020.

First technical presentation was made in 360th SEAC; Chhattisgarh meeting dated 1st March 2021. ToR was granted vide Letter No. 100/SEAC.CG/Mine/1496 dated 09/04/2021

It is proposed to excavate Total quantity of **455928.76 TPA (ROM)** { (1,10,829.38 (M/S. Jagdamba Sponge Private Limited) + 1,75,061.25(Sh.Nitin Singhal) + 1,70,038.13 (Smt. Tulsi Basant)} limestone by Opencast Semi-Mechanized method from applied mine leases in Gudeli Limestone Mine Cluster. The Total mine lease area is **8.875 Ha** { (2.26 ha. (M/S. Jagdamba Sponge Private Limited) + 3.113 ha. (Sh.Nitin Singhal) + 2.836 (Smt. Tulsi Basant)} and total mineable reserve is **2629861.25 MT** { (6,34,187.50 MT. (M/S. Jagdamba Sponge Private Limited) + 10,05,698.75 MT (Sh.Nitin Singhal) + 9,89,975.00 MT (Smt. Tulsi Basant)} for limestone.

The studies were undertaken by The Consultant namely, Aseries Envirotek India Pvt. Ltd. (AEIPL) Noida. AEIPL is a National Accreditation Board for Education and Training (NABET) Accredited Consultant Organization (ACO) and is qualified to prepare EIA reports for Project / Activity 1(a) (Mining of Minerals), a mandatory requirement for agencies submitting such studies to regulators for the purpose of seeking EC.

The EIA study report has been based upon the following :-

- Field data collection on different aspects of environment including air, soil, water, land, meteorology, noise, flora, fauna, agriculture and socio-economy in the study area of 10 km radius with mine as its center.
- Study of opencast mining methodology, water requirement, source of pollutants and pollution control strategy.
- Ecological Prospective and Green Belt Development.

The EIA study evaluates the impact on the present environmental scenario and check out the environmental management plan incorporating further step to mitigate the adverse impacts of air, noise, water, land pollution on environment.

1.2 Location and Communication

Table 1-1: Location and Communication from ML area

S.No.	Particulars	Details
A.	Nature of the Project	Proposed Limestone Mining Project of M/S. Jagdamba Sponge Private Limited, Shri Nitin Singhal and Smt. Tulsi Basant in Gudeli Limestone mining Cluster
B.	Size of the Project	
1.	Mine area	8.875 Ha {(2.26 ha. (M/S. Jagdamba Sponge Private Limited) + 3.113 ha. (Sh.Nitin Singhal) + 2.836 (Smt. Tulsi Basant)}
2.	Production Capacity	455928.76 TPA (ROM) {(1,10,829.38 (M/S. Jagdamba Sponge Private Limited) + 1,75,061.25 (Sh.Nitin Singhal) + 1,70,038.13 (Smt. Tulsi Basant)}
C.	Location Details	
1.	Village	Gudeli
2.	Taluka	Sarangarh
3.	District	Raigarh
4.	State	Chhattisgarh
5.	Latitude & Longitude	Latitude : 21°40'30.59"N to 21°40'39.53"N Longitude: 83°12'10.38"E to 83°11'50.98" E
6.	Toposheet No.	64 O/2, O/6
D.	Environmental Settings of the Area	
3.	Nearest Human Habitation	Gudeli (~1.20 km, towards west direction)
	Nearest Town / City	Raigarh (~31.0 km, North East direction)
4.	Nearest Railway Station	Champa- Raigarh Railway Line ~30.45 km, North East direction..
5.	Nearest Airport	Bilaspur Airport (~117.50 km, West direction).

1.3 Project Chronology till Date

1. The online file for the project proposal namely Form-1 (as per the EIA Notification 2006, as amended till date) along with a Pre-feasibility Report, Approved Mining plan and proposed Terms of References (ToR) for carrying out environmental studies to the State Environment Impact Assessment Authority Chhattisgarh for the mine lease of M/S. Jagdamba Sponge Private Limited was submitted on 27/05/2021 whereas for mine leases of Sh. Nitin Singhal and Smt. Tulsi Basant was submitted on 28/02/2021.
2. First technical presentation was made in 363rd SEAC; Chhattisgarh meeting dated 24th March 2021 (Shri Nitin Singhal & Smt. Tulsi Basant) and 367th SEAC meeting dated 16th June 2021 for M/s. Jagdamba Sponge Private Limited .
3. ToR was granted vide Letter No. 581/SEAC.CG/Mine/Raigarh/1575 Naya Raipur Atal Nagar to Sh. Nitin Singhal, and vide Letter No. 587/SEAC.CG/Mine/Raigarh/1574 Naya Raipur Atal Nagar to Smt Tulsi Basant) dated 25/06/2021 whereas vide Letter No. 904/SEAC.CG/Mine/Raigarh/1670 Naya Raipur Atal Nagar to M/s. Jagdamba Sponge Private Limited dated 28/6/2021.

1.4 Project Description

1.4.1 Study Area at a Glance

The study area is taken in accordance with the provisions of sector specific EIA guidance manual for Mining of Minerals manual, published by Ministry of Environment and Forests, during 2010. The study area for the Soapstone Mining Project was as follows:

- The proposed project area (M. L. area) is considered as ‘Core Zone’.
- 10 km radius from the boundary limits of the M.L. area is considered as ‘Buffer Zone’.

1.4.2 Utilities

Table 1-2: water Requirement for the mining

S.No.	Requirements		Quantity and Nos.		
1.	Water Requirement	Domestic	Drinking	0.755 KLD	3.775 KLD
		Propose	Sanitation	3.020 KLD	
		Dust Suppression		4000 m ² area per 0.5 L	4.0 KLD

		Greenbelt Development	4167 plants per 2.5 LPD	10.417 KLD
	Total			18.192 KLD
2.	Man-Power Requirement		151	

1.4.3 Topography and Drainage

The topography of the area is Flat land. The stone is buried under the soil in the granted area. The general slope is towards north. Maximum Altitude of the applied area is 209 m AMSL at southern part while lowest side is 208 m AMSL at northern part of granted area. Therefore, granted area has been surveyed in contour interval of 1 meter and shown on plan Accordingly. Granted area is devoid of any vegetation. The climate of the area is sub-tropical with hot summer.

At present there is no water source, which is passing through the lease area and its surrounding except, Mahanadi river at 2.80 km towards north, Lath Nalla at 390 m towards east, village pond at 1.50 km towards west, Canal 5.00 km towards north west near Bhimkhampura village area, reservoir at 44.00 km towards east. Proper care will be taken at the time of mining.

1.4.4 Local Geology

The applied area is covered with alluvial soil deposit of recent formation. The applied area forms a part of the Raigarh Formation of Raipur Group of Meso to Neo Proterozoic Chhattisgarh Supergroup comprises of Shale, Arenite and buff green shale, Cherty Limestone. The sequence of formation is as follows:-

Meso to Neo Proterozoic Chhattisgarh Supergroup	Raipur Group	Raigarh Formation	Cherty Limestone
---	--------------	-------------------	------------------

1.4.5 Mineable Reserve & Life of Mine

Table 1-3: Geological Reserve

<i>Reserve</i>	M/S. Jagdamba Sponge Private Limited	Sh. Nitin Singhal	Smt. Tulsi Basant	Total
1) GEOLOGICAL RESERVE	21,57,925.00 MT	22,95,837.50 MT	20,87,956.25 MT	65,41,718.75 MT
Less "	6,12,862.50 MT	514,701.25 MT	406603.75 MT	15,34,167.5 MT
i) Reserve Blocked under boundary				
ii) Reserve Blocked under mine benches	9,10,875.00 MT	6,92,100.00 MT	562,462.50 MT	21,65,437.5
iii) Reserve Blocked under Stone Crusher Plant	----	83,337.50 MT	128,915.00 MT	2,12,252.5 MT
2) MINEABLE RESERVE (1 - i - ii -iii)	6,34,187.50 MT	1,005,698.75 MT	989,975.00 MT	26,29,861.25 MT
Less	31,709.38 MT	50,284.95 MT	49,498.75 MT	1,31,493.08 MT
iv) Mine Loss				
3) RECOVERABLE RESERVE (2 - iv)	6,02 478.13 MT	955,413.80 MT	940,476.25 MT	24,98,368.18 MT
4) TOP SOIL TO BE GENERATE	10 475.00 MT	28776.25 MT (11,510.50 m ³)	10,525.00 MT	49,776.25 MT

1.5 Life of Mine

Table : Life of Mine

		M/S. Jagdamba Sponge Private Limited	Sh. Nitin Singhal	Smt. Tulsi Basant
A)	Estimated recoverable reserves	240991.25 cum or 602478.13 tons	382165.53 cum. or 955413.81 tons	376190.50 cum Or 940476.25 tons
B)	Average rate of production per year	44202.55 cum. or 110506.38 tons	69377.08 cum or 173442.69 tons	66012.65 cum Or 165031.63 tons

	during Five year plan			
C)	Expected rate of production after five year plan	3995.7 cum. or 9989.25 tons	7050.9 cum or 17627.25 tons	9225.45 cum or 23063.63 tons
D)	Sanctioned Granted period	30 year from the date of lease agreement	30 year from the date of lease agreement	30 year from the date of lease agreement
E)	Plan period	10 years	10 years	10 years
F)	Thus anticipated life of the quarry	About 10 years. (Up to 30m of mine depth from surface level)	About 10 years. (Up to 30m of mine depth from surface level)	About 10 years. (Up to 30m of mine depth from surface level)

1.5.1 Mining Method

The mode of working will be open-cast semi mechanized method of mining with low capacity blast. Small scale drilling and blasting will be carried out for exploration of stone. Heavy hammer and hardened chisels will yield the sufficient quantity of stone. Further the stone will be sized and dressed according to the consumer's specifications, demand of market and stacked on the mine surface. Loading of sized stone chip will be done semi mechanized with the help of local labours.

The gradient of the ramp with benches will be maintained to 1:15 i.e. 15 meter long ramp for every 1 meter of depth. Width of ramp will be 3 - 4 meter.

Width of benches will be maintained similar to height of benches. The quarry will be developed in 9 benches of 3m height x 3 m width each and 10th bench i.e last bench of 3 m height only. Along with 0.50m of top soil . However during advancement of mining operation the mine will be worked into 1.5m 1.5 m height of sub-benches. For Mineral conservation finally at mine boundary benches will be converted to 3m (H) X 3m (W)

Table: Extent of Opencast Mechanized

S. NO.	NAME OF MACHINERY	NUMBER		
		M/S. Sponge Limited	Jagdamba Private	Sh. Nitin Singhal Smt. Tulsi Basant
1.	Excavator/Loader	3	4	3
2.	Dumper/Tipper	7	8	8
3.	Tractor	2	1	1
4.	Water Tanker with water sprinkler	1	1	1
5.	Dewatering Pumps	2	1	1
6.	Rock breaker	3	3	3
7.	Compressor	3	3	3
8.	Jack Hammer	3	3	3

1.6 Meteorology Long Term Meteorology (Secondary Data)

Information presented in subsequent paragraphs is from the Indian Meteorological Department (IMD) Raigarh, Long Term Climatological Tables, 1971-2000. These tables give useful information about a region's weather, since it was collected over a period of 30 years.

1.6.1 Temperature

The average ambient temperature remains 26.2°C, varies from 9.2°C to 41.7°C. The minimum - maximum temperature range is 29.5 - 49 °C in summer, and 8 - 25 °C in winter...

1.6.2 Wind

Long- term wind direction data indicates that the predominant wind during the study period (March, April, May)-2021 is NE and second predominant wind direction is NW

1.6.3 Rainfall

The annual rainfall in the district is around 1240 mm. The rainfall increase slightly from South to North. Out of the total annual rainfall, 90% occurs in SW monsoon in-between 15th June to 15th September. Due to the sub-tropical climate the maximum temperature ranges between 35 to 48°C where as humidity varies from 36% and 86%.

1.6.4 Relative Humidity

Most humid conditions were found in the monsoons, followed by post-monsoons, winter and summer in that order. The average relative humidity remains around 62.6%, varies from 15.4% to 99.2%

1.6.5 Site Specific Meteorology

Environmental monitoring was carried out for summer Season covering the months of (March to may 2021). Meteorological data is collected for wind speed, wind direction, temperature, rainfall and cloud cover.

Meteorological data showed that the average wind speed during the study period was observed to be 9.21 m/sec.. It was observed that during study period wind blows pre dominantly from NE and Second pre dominant direction is NW. The data obtained during the study period was compiled to obtain average data

1.7 Existing Environment Scenario

1.7.1 Land Use

Land Use of the Study Area

The land use land cover map of the study area has been prepared using recent Landsat satellite image, area and distance calculations have been carried out using GIS software after geo-referencing and interpretation. Total Land covers an area of 26732.07 ha. Out of which 5845

(21.87%) is builtup land 6962.5 (26.05 %) is crop land 3593.42 (13.44%) fallow land 3789.45 (14.18 %) is forest land 3342.13 (12.50 %) waste land 3198.79(11.97) Water bodies /River.

1.7.2 Soil Quality

The soils of study area are predominantly Sandy loam in texture. The pH of the soil is ranges from 7.26 to 8.16. The soil being of friable consistency, the bulk density of the soil is in the range of 1.35 to 1.52 g/cm³. The organic matter content of the soil samples varies from 0.22 to 0.38 %.

1.7.3 Ambient Air Quality

The above analysis report shows that since this mine is not operating and traffic on the National Highway is also less, population in the village is not more. The baseline ambient air quality was found to be within the permissible limits of NAAQS.

1.7.4 Noise

Day time Noise Levels (Leq day)

- The day time (Leq day) noise levels observed in the range of 56.2 to 41.8 dB (A) in study area.

Night time Noise Levels (Leq night)

- The night time (Leq night) Noise levels observed in the range of 48.3 to 36.8 dB (A) which is within the prescribed limit of 45 dB (A) in study area. .

1.7.5 Water Environment

Groundwater Quality

The analysis results shows that the pH for the ground water samples GW1, GW2,GW3 and GW4, ranged from 7.32 to 7.65 indicating slightly alkaline in nature. The TDS (Total Dissolved Solids) were found to be in the range 591.0 mg/l to 563.0 mg/ l which is within the permissible limit of 2000 mg/l. Total Hardness of Ground water samples in the study area was found to be 281-258 mg/l which is within permissible limit. Alkalinity indicates better buffering capacity of water and ranges between 156.0-208.0 mg/l.

Fluoride content varies from 0.62 mg/l – 0.80 mg/l which is within permissible limit. The overall ground water quality in the study area was found to be mineralized with respect to total dissolved solid, chloride (82.0 mg/l to 99.0 mg/l), sulphate (38.0 mg/l to 40.0mg/l) and hardness.

Surface Water Quality

Surface water samples were collected, and analyzed, pH value was found to be 7.54 to 7.66 mg/l which indicate that surface water is alkaline in nature; TDS was found to be 265 to 271 mg/l. Dissolve oxygen were found about 5.8 and 6.4 mg/l. It is seen that the physicochemical analysis of other parameters like chloride, calcium, magnesium, nitrate and fluoride were found within the desirable limit. The overall surface water quality of the available sources

within the study area was found to be good physico-chemically with respect to all the parameters. There is no organic load-observed in the sources monitored indicating no pollution load in the source.

Biological Environment

Ecological study is essential to understand the impact of industrialization and urbanization on existing flora and fauna of the study area.

There is no wildlife sanctuary, National park, Biosphere reserve, Wildlife corridors, Tiger/ Elephant reserve within 10 km radius of the mining lease.

1.7.6 Socio Economic Status

The study area includes 46 villages within the 10 km. radius with a total population 70577. as per census 2011. As per census 2011, about 8037of the total are main workers, 1652 are marginal workers.

1.7.7 Impact on Air Environment

- Water sprinkling will be done twice during the day in summer season and once during the day in winter season for settling of dust particles.
- Sharp drill bits will be used for drilling and they will be maintained periodically to reduce the generation of dust.
- Transportation of mineral will be done on Kaccha road which will generate dust and rest of the distance will be on National Highway will not cause air pollution.
- Drilling machines will have bag filters attached to them also to prevent the dust to get air borne.

1.7.8 Impact of Traffic Density:

Traffic analysis is carried out by understanding the existing carrying capacity of the roads near to the project site and the connecting main roads in the area. Existing traffic on these roads was compared with the carrying capacity of these roads as per IRC guidelines and it was found that the roads are capable of handling the additional traffic/load.

Post project PCU will be **5149** PCUs (5,074 PCUs Existing + 75 PCUs Proposed PCUs) on NH-216. It can be clearly stated that the road used for carrying mineral to the end users is capable of handling the additional load due to mining activities.

Table: Carrying Capacity of Roads

Project site to NH	Vol. of vehicle in PCU/day	Capacity of Roads in PCU/day	LOS
NH-126	5149	15000	0.343 Very good

1.7.9 Impact on Noise Environment

The expected noise levels in the working environment are compared with standards prescribed by occupational safety and health administration (OSHA-USA) & CPCB-NEW DELHI, the noise levels are expected to be in the acceptable range.

1.7.10 Impact on Water Environment

Impact on Surface Water Quantity

Surface water will not be utilized and impact on surface water quantity is not anticipated due to the proposed activity.

Impact on Surface Water Quality

The proposed opencast mining operation may cause water pollution. The sources of pollution generally are:

- Wash off from dumps
- Soil Erosion

Mitigation Measures

In open cast mining pits as well as on dumps, it is necessary that the rainwater falling outside the edge limit of the working areas will not be allowed to enter into the pit and working areas. Therefore it is proposed to develop garlands drains around the mining pits and dumps to arrest the surface runoff water and divert it to lower synclines without any contact with the mining operations.

In the lease for proper drainage of water, a set of garland drainages will be made in the mining lease area and the water will be accumulated at the lower most gradient by constructing siltation tanks which will act as water storage in the area as well as collection of silts. Silts will be regularly cleared regularly.

Impact on Groundwater Quantity

As evident from nearby wells, as well as also by villagers during the summer water table goes down below 45 meter and in rainy season water table comes up within 35 meter. Since the water table is below the maximum excavation depth (30 m) of operation and the flow or extent of nearest hydrology is too far from the proposed lease area thus no impact can be assessed on water table, water flow or hydrology. Moreover no sewage or other effluents will be generated from the mine closure activity which are required to be discharged on water. Hence no water pollution can be assessed

1.7.11 Impact on Flora and Fauna

As the mining activities will be confined to core zone only, no adverse impact is foreseen on the flora & fauna in the core zone. To prevent the entry of wildlife animals from entering the lease area proper fencing will be done all around the lease area.

1.7.12 Impact on Top Soil

During mining of limestone top soil will be generated and will be used for plantation.

1.7.13 Impact on Socio Economic Status

Socio-economic survey was conducted in six villages within the study area located in all directions with reference to the project site.

The respondents were asked for their awareness/opinion about the project and their opinion about the impacts of the project, which is an important aspect of socio-economic environment, viz. job opportunities, education, health care, transportation facility and economic status.

1.8 Environment Monitoring Program

The monitoring of pollutant in mine will be carried out for air, water, soil and noise. It takes care of all monitoring needs of the mine. Additionally ambient air and work zone monitoring in mine will be conducted in every season near mining operation, loading and transportation (haul road) areas by Government approved private agency. The analysis results of air monitoring will be properly recorded and submitted to the statutory authorities from time to time. Noise measurement of mine equipment will be done once in a year, ambient air monitoring will be done once in one season at three locations (1 in upwind, 1 in downwind, 1 in lease area. Ambient noise monitoring will be carried out at 3 locations, 1 within the lease area, and 2 locations of nearest habitation to the lease. Water quality monitoring will be done once in season at two locations & soil quality monitoring will be done once in a year at 2 locations within the study area. A total of Rs. 1.14 lakhs/- every year will be spent on monitoring of environmental parameters.

1.9 Additional Studies

1.9.1 Risk Assessment and Disaster Management Plan

The following natural /industrial problems may be encountered during the mining operation are:

- Inundation-filling of the mine pit due to excessive rains.
- Slope failures at the mine faces or stacks.

Water table will not be encountered during proposed working. No high risk accidents like landslides, subsidence flood etc. have been apprehended. But possibility of accidental disaster is also not ruled out. Therefore, all the statutory precautions will be taken for quick

evacuation as per the Mines Act 1952, the Mines Rules 1955, Rule of MMR- 1961 and the Rules of MCDR-1988.

1.10 Environment Management Plan

The environment management plan is prepared with a view to facilitate effective environmental management of the project. Apart from having an Environmental Management Plan, environment management cell consisting of mines manager, safety officer and environmental officer is constituted. A total of Rs. 10.39 Lakhs/- would be spent on environment management activities every year.

1.11 Project Benefits

The surrounding inhabitants around the mine lease area are mainly agricultural oriented. Opportunities for jobs activities will be created and mining will serve as a source of permanent livelihood. The mine will create employment directly or indirectly. Additional, certain works like transportation will be outsourced on contract. So, overall effect of mining is expected to be positive.

