

EXECUTIVE SUMMARY

(In English & Hindi)

Of

Draft EIA/EMP Report

For

Chhaperbbhanpuri Lime Stone Mine

Khasra no. 1200(Part)

Near Village: Chhaperbbhanpuri

Tehsil: Tokapal, & District: Bastar (Chhattisgarh).

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

Mining Lease Area: 1.53Ha, Production Capacity: 9,950TPA

Project Cost: Rs. 32.70 LAKH

Category-B1

In Favor of	Prepared By
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1 EXECUTIVE SUMMARY

1.1 Introduction and Background

The Chhaperbbhanpuri Lime stone mine is located at a distance of 20 kms in west from district Headquarters –Jagadapur and falling in jurisdiction of village –Chhaperbbhanpuri.

The mining plan of the Chhaperbbhanpuri Lime stone Mine was approved by letter no BST/LST/MPLN-722/NGP Dated 22.11.2000(Annexure -1)

The mining lease was granted to Shri.Pradeep Goyal S/o Late Shri Mathura Prasad Goyal ,resident of Nayapara ,Gedam road Jagdalpur for the period of 20 years i.e. 22nd February 2001 to 21st February 2021(Lease deed enclosed in Annexure –2) Original Lease Period 20 Years (22/02/2001 to 21/02/2021)

New Extended Period 50 year (22/02/2001 to 21/02/2051)

The letter from State Govt. for lease period enhancement with vide letter no-1791/Mineral/KHLI/Mine12/98/2016 dated 09.06.16 enclosed as (Annexure-3)

As per the gazette notification Section 8A(3) all the mining leases granted before the commencement of the Mines and Minerals (Development & Regulation)Amendments Act 2015 shall be deemed to have been granted for a period of 50 years. Hence the lease period of mining lease increased 20 years to 50 years. The modification in mining plan required as per the rule 17(3) of MCR 2016.Therefore the lessee submitting the modified mining plan for the onwards period of 2017-18 to 2020-21.Lease period of all the major minerals increased upto 50 years from the date of grant.

The Project Proponent has produced 14443.489 TPA (2016-2017) Tonne of Limestone without Environment Clearance. Therefore it is a violation case. The application was submitted to the SEIAA Proposal No SIA/GJ/MIN/74582/2018 on dated 14.04.2018.Due to incomplete online information submitted by the applicant. The Copy of Violation letter given by IBM and reply of violation by lessee is enclosed as (Annexure-4)

First technical presentation was made to SEAC, Chhattisgarh on dated 26th August 2018.

It is proposed to excavate approximately 9950TPA (ROM) Limestone by Opencast Semi-Mechanized method. The lease area is 1.53Ha and total mineable reserve is 100993 MT for limestone. The expected life of the mine will be 10.15 or says 11years..

The studies were undertaken by The Consultant namely, Overseas Min-Tech Consultants (‘OMTC’). OMTC 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.	Area	Name	Aerial Distance in Km and Direction from M.L area	
			Core Zone	Buffer Zone
1.	National Parks/ Wildlife Sanctuaries	-	Nil	Nil
2	Biosphere Reserves/ Tiger Reserves/ Elephant Reserves and any other reserves	-	Nil	Nil
3.	Forest (PF/RF/Unclassified)	Open Jungle Open Jungle Fairy Dense Jungle Madhota PF Fairy Dense Jungle Fairy Dense Jungle Open Jungle Open Jungle	Nil	2.90km towards South. 3.08km towards NW 3.90km towards North 5.60km towards NNW 8.43km towards NW. 7.52km towards NW. 6.88km towards SW. 6.32km towards SE.
4	Habitat for migratory birds	-	Nil	Nil

S. No.	Area	Name	Aerial Distance in Km and Direction from M.L area	
			Core Zone	Buffer Zone
5	Corridor for animals of Schedule I and II of the wildlife (Protection Act 1972)	-	Nil	Nil
6	Archaeological Site (notified, Other)	-	Nil	Nil
7	Defense Installation	-	Nil	Nil
8	Industries / Thermal Power Plant	-	Nil	Nil
9	Other Mines	-	Nil	Nil
10	Airport	-	Nil	Nil
11	Railway Lines	-	Nil	Nil
12	National Highways/ State Highway	-	Nil	Nil
13	Human Habitations	-	Chhaperbhanpuri	1.5 kms in NE from the mine site

1.3 Project Chronology till Date

1. Chhaperbhanpuri Limestone Mining Project (Pradeep Goyal) submitted relevant documents, 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, on 14.04.2018
2. SEIAA committee has raised the quarry for shortcoming the documents on dated 16.07.2018.
3. A presentation to the SEAC, Chhattisgarh, to finalize the ToR for the EIA study was held on 26.10.2018.
4. ToR letter has been issued by SEAC, Chhattisgarh in favor of, Shree Pradeep Goyal Chhaperbbhanpuri Lime stone, Near Village Chhaperbhanpuri, Tehsil Tokapal, District Bastar (Chhattisgarh) vide letter no.587/SEAC,CHH/Mine/Bastar/708 on Dated 26.03.2019.
5. OMTC carried out monitoring studies during the Pre monsoon Season (March, April, May) 2019 and presented the findings in draft EIA report.

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: Requirement for the mining

S.No.	Requirements		Quantity and Nos.		
1.	Water Requirement	Domestic Propose	Drinking	0.31KLD	1.395 KLD
			Sanitation	1.085KLD	
		Dust Suppression		920 m ² area per 1.0 L	0.092 KLD
		Greenbelt Development		315 plants per 5.0LPD	1.575KLD
Total				3.062KLD	
2.	Man-Power Requirement		112		

1.4.3 Topography and Drainage

Topographically the mining lease area is a north- east gentle mapping mound. Limestone deposit found in the form of thickly bedded hard massive and right from the top of the area. Highest contour of the area is 565meters above from MSL and lowest contour is at 554 meters above MSL.

The Indrawati river is the main river of the area and forms the main drainage system. It flows in north direction at a distance of 1.50 km in east. One nalla flowing 0.5 km in west. Other Seasonal nalas and streamlets are amencing from higher parts of the area join the Indrawati river. The drainage pattern is dendritic to sub –dendritic.

1.4.4 Regional Geology

Group	Formation	Litho Units
Recent to Sub-Recent	Soil and Laterite	
INDRAWATI GROUP (Late Proterozoic)	Jagdapur formation (200Meters thick)	Purple Shale with purple grey stromatolitics dolomite Limestone and Shale
	Kanger Formation (150-200Meters)	Grey and black limestone
	Cherakur Formation (200 Meters thick) Tirathgarh Formation (100 Meters Thick)	Purple shale with Arkose sandstone, Chert and pebble Conglomerate, grit. Quartz arenite (Chitrakot Sanstone) Sub arkose and conglomerates.
Achaean	Granite and Super crustal	

1.4.5 Mineable Reserve & Life of Mine

Table 1-3: Geological Reserve

A. Total Mineral Reserve	UNFC Code	Quantity in TPA	Grade
Proved Mineral Reserve 111	111	1,00,993	Cao 42.52% SiO ₂ 17.86% MgO 01.02%
Probable mineral Reserve 121 and 122	122		
B. Total Remaining Resources			
Feasibility mineral Resource	211		
Prefeasibility mineral Resource	221 & 222	10,29,264	Cao 42.52% SiO ₂ 17.86% MgO 01.02%
Measured mineral resource	331		
Indicated mineral resource	332		
Inferred minerals resources	333		
Reconnaissance mineral resource	334		
Total Reserve +Resources		11,30,257	Cao 42.52% SiO ₂ 17.86% MgO 01.02%

Total Mineral Reserve: 100993TPA

Total Mineral Resource: 10, 29,264

Life of mine	Mineable reserve/ Average annual production
	9,950/1,00,993 =10.15 years

1.4.6 Mining Method

- The mining operation was carried out by fully manual open cast mining method in very small scale.
- No blasting carried out for production due to very sensitive area of naxalite problems. The limestone is soft, so local labour with the help of heavy hammer chisel and digging rod produce sufficient of limestone manually.
- The present bench height is 2 meters and faces slope 45 ° angles.
- The ultimate pit depth is 534.5 to 550 m.RL.shown in all plans.
- The Pit road is 2 times of tractors width and maintained in 1:16 gradient.
- Single benches developed in systematic manner. Limestone will be transported from mine to stack yard by 2 tractors .Loading of limestone will be done by manual labours only. The present pit is covering 595 sq. meters area and having 5 meters depth in southern part up-to 551m.RL.
- During the period of modified mining plan the same opencast mining will continue in systematic manner as earlier .4 benches of 2 meters height proposed between 556 to 548m.RL. Mining operation will be carried out in single day shift from 8am to 5pm with 1 hour lunch break and weekly off on Monday due to local market day.
- The year-wise production is being projected by considering the present requirement. The recovery % limestone from of ROM is 98% (2% deduction due to mining losses during the various mining Operations such as sizing loading) Year-wise proposed production for the ensuring five years of modified mining plans are as follows:

Table 1-4: Extent of Opencast Mechanized

Activities	Opencast Mechanized
Excavation	Manual
Loading	Manual
Transportation	Hired Tractors with 3 Tones Capacity trolley
Crushing/Screening	Very Small Crushing Screening unit installed inside the lease area near Boundary pillar no.11

1.5 Meteorology Long Term Meteorology (Secondary Data)

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

1.5.1 Temperature

The month from March to May are considered as hottest with increase in temperatures. May is generally the hottest month with a mean daily maximum temperature of about 38.0°C and mean

daily minimum of about 24.1°C. The highest temperature recorded at Jagdalpur is 46.1°C on 22th May 1912. From November, both day and night temperatures start decreasing rapidly. December is generally the coldest month with the mean daily maximum temperature at about 27.8°C and mean daily minimum at about 11.1°C. Minimum temperature sometimes drops down to subzero temperatures and the lowest temperature recorded 2.8°C on 8th January 1946.

1.5.2 Wind

Long- term wind direction data is presented, and indicates that the predominant wind during the study period (March, April, May)-2019 is South-West at daytime and wind direction is observed to be from West to North-West directions at evening.

1.5.3 Rainfall

As per IMD station at Jagdalpur the rainfall in region was observed to be 1445.5 mm in a year, bulk of rainfall was received in monsoon months from June to September. Maximum cloud cover was observed in the months of June to September.

1.5.4 Relative Humidity

Most humid conditions were found in the monsoons, followed by post-monsoons, winter and summer in that order. Mornings were more humid than evenings and humidity ranged from a high of 88-82% in monsoon mornings to a low of 53-34% in summer evening.

1.5.5 Site Specific Meteorology

Environmental monitoring was carried out for Pre Monsoon Season covering the months of (March, April, May) 2019. Meteorological data is collected for wind speed, wind direction, temperature, rainfall and cloud cover.

Mean average temperature recorded during study period was 31.32°C with mean maximum temperature of 46.6°C and mean minimum of 19.2°C. The data obtained during the study period was compiled to obtain average data

1.6 Existing Environment Scenario

1.6.1 Land Use

Land Use of Mine Lease Area

At present, there is a pit in the area. It is proposed to work the deposit of Soapstone e in next five years by developing the mine by formation of proper benches, each of 3m height. At the conceptual stage, the mined out pits will acquire 1.53 ha will be convert into water reservoir.

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 30095.64 ha. Out of which

2599.32(8.64%) is buildup land 4968(16.51%) is crop land 2873.05(9.55%) fallow land 3548.14(11.79%) is forest land 2195.08(7.29%) waste land 2589.99(8.61) Water bodies /River.

1.6.2 Soil Quality

The soils of study area are predominantly Sandy loam in texture. The pH of the soil is ranges from 7.42 to 7.82. The soil being of friable consistency, the bulk density of the soil is in the range of 1.66 to 1.72 g/cm³ whereas the porosity and water holding capacity are in the range of 33.84 to 36.09 % and 28.56 to 33.24 % respectively.

1.6.3 Ambient Air Quality

The ambient air quality of study is PM10 (Maximum-66.26, Minimum-62.34), PM 2.5(Maximum-32.14, Minimum-26.54), NO₂ (Maximum-15.66, Minimum-10.32), SO₂ (Maximum-12.62,Minimum-9.54) & Free Silica(Maximum-1.28,Minimum-1.12).

1.6.4 Noise

Ambient noise samples were collected from 5 locations in the study area; samples were collected from residential as well as industrial area (Mine site).

- **Residential area:** The day time (Leq day) noise levels observed in the range of 49.8 to 47.8 dB (A) in residential area. The night time (Leq night) Noise levels observed in the range of 46.6 to 44.4 dB (A) which is within the prescribed limit of 45 dB (A) in residential area.
- **Industrial Area:** The noise levels at the mine site were found to be 63.4dB (A) during day time and 56.6dB (A) during night time.

1.6.5 Water Environment

Groundwater Resources

The Ground Water Resources and Irrigation Potential of the district were estimated during 2011 in collaboration with the Government of Uttarakhand using the methodology suggested by “Ground Water Estimation Committee (GEC-97)”.

Groundwater Quality

The analysis results shows that the pH for the ground water samples GW1, GW2,GW3, GW4, GW5, GW6 and GW7 ranged from 7.52 to 7.22 indicating slightly alkaline in nature. The TDS (Total Dissolved Solids) were found to be in the range 364.0 mg/l to 254.0 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 226-196 mg/l which is within permissible limit. Alkalinity indicates better buffering capacity of water and ranges between 136.0-104.0 mg/l.

Fluoride content varies from 0.8 mg/l – 0.28 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 (68.0 mg/l to 48.0 mg/l), sulphate (62.0 mg/l to 36.0mg/l) and hardness.

Surface Water Resources

The surface water sample was taken from “River Indrawati” during the Pre Monsoon season

Surface Water Quality

Surface water samples were collected, analyzed and compared with Indian standard for drinking water 10500:2012, pH value was found to be 7.12 mg/l which indicate that surface water is alkaline in nature; TDS was found to be 246.0 mg/l to 744. Dissolve oxygen were found about 7.2 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.

1.6.6 Cropping Pattern

The main base of the economy of Bastar district, agriculture and forest produce is collection. Agriculture is mainly produced in paddy, maize crops and wheat, jowar, kodo kutki, gram, tur, urad, sesame, Ram sesame, mustard. Besides agriculture, animal husbandry, poultry farming, fisheries also play a supporting role.

1.6.7 Socio Economic Status

The study area includes 59 villages within the 10 km. radius with a total population 67391. as per census 2011. In the study area about 26197 of the total population is literates. As per census 2011, about 18107 of the total are main workers, 14794 are marginal workers.

1.6.8 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.

1.6.9 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.

Project site to NH	Vol. of vehicle in PCU/day	Capacity of Roads in PCU/day	LOS
PWD (Chitrakote Road)	243	4500	0.054 Excellent

1.6.10 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.

1.6.11 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

The impact of mining on groundwater is not anticipated as the mining pit will be below the general ground level of the surrounding area. The mining pit will be start from the 560 mRL

to 554mRL, 2nd bench parameter will be 554 mRL to 552 mRL, 3rd bench parameter will be 552mRL to 550mRL & 4th bench parameter will be 550mRL- The water table is available within 25 meters from the surface level in rainy season and during summer the water table goes below 25 meters The ultimate working depth will be maintained up to 550 m RL hence will not touch the general water table.

1.6.12 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.

1.6.13 Impact on Top Soil

During mining activity Limestone is Top Soil not going to generate during the ensuring 5 year of mining operation, if small quantity will generate from pocket .it will be used for afforestation purpose only.

1.6.14 Impact on Socio Economic Status

Socio-economic survey was conducted in five 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.

1.7 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. 0.90 lakhs/- every year will be spent on monitoring of environmental parameters.

1.8 Additional Studies

1.8.1 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.

1.9 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. 4.3Lakhs/- would be spent on environment management activities every year.

1.10 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.

