DRAFT ENVIRONMENT IMPACT ASSESSMENT REPORT
&
ENVIRONMENT MANAGEMENT PLAN
Of

M/s Ganpati Metals & Minerals
(Talpur Limestone Quarry)
At
Village: Talpur, Tehsil: Sahaspur Lohara, District: Kabirdham,
State: Chhattisgarh

Total Area- 2.956 ha.

At Khasra No.

35/1, 35/2, 35/5, 35/6, 35/10, 35/11, 35/12, 35/15, 35/17, 35/20,

Total Capacity: 1, 50,000 Tons per annum.

EXECUTIVE SUMMARY IN ENGLISH

Applicant

Partner: Shri Gautam Chand Jain & Shri Ajay Gupta

Contact: 8826287364, 9555548342
GSTIN-09AATFP5994M1ZY
PAN- AATFP5994M

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SUMMARY AND CONCLUSION

INTRODUCTION

This is a project for Semi mechanized open-cast method adopting a system of benches maintaining it to 1.5m as per rule 61(2) (ii) of Chhattisgarh Minor Mineral Rules, 2015. The Proposed project having mine Area- **2.956** Ha is allotted in favor of **M/s Ganpati Metals & Minerals**.

The proposed **Talpur Limestone Quarry** located at Khasra no. 35/1, 35/2, 35/5, 35/6, 35/10, 35/11, 35/12, 35/15, 35/17, and 35/20, Village- Talpur, Tehsil - Lohara, District – Kabeerdham, Chhattisgarh, Area- **2.956** Ha, the proposed production capacity of Talpur Limestone Quarry will be **1,50,000 Tons /Annum**

The project is well connected to village road, which connects to the site. NH- 12 is approx. 25 km in an SH-05 is approx. 308 m from the mine site. The nearest railway station is Durg approx. 74 km from the project site.

PROJECT DESCRIPTION

The proposed **Talpur Limestone Quarry** located at Khasra no. 35/1, 35/2, 35/5, 35/6, 35/10, 35/11, 35/12, 35/15, 35/17, and 35/20, Village- Talpur, Tehsil - Lohara, District – Kabeerdham, Chhattisgarh, Area- 2.956 Ha, the proposed **Talpur Limestone Quarry** production capacity from the mine lease is **150000 Tons/Annum** belongs to **M/s Ganpati Metals & Minerals**. The lease for mining of **Talpur Limestone Quarry** over an area of **2.956** Ha was granted by the Government of Chhattisgarh. This is a new Mine

The Mine Plan for the 1stFive year was approved by Mining Department, Collectorate Office, District - Bilaspur of Chhattisgarh vides letter No. 1973/Khani/Chunapathar. /U. Yo. /2021 dated 07/10/2021.

The proposed production capacity of the mine is **150000 Tons**/annum of **Talpur Limestone Quarry**. The mining operation will be Semi mechanized opencast mining with bench formation& sizing, loading and transportation of Minerals.

Environmentally sensitive objects in the area surrounding the project site are presented in

Table 1 Details of Environmental Sensitivity

S. No.	Particular	Details
Environmental Sensitivity		
	Nearest Village	Talpur Village, Approx. 1.0 Km
	Nearest Town	Durg, approx.74 Km
	Nearest National / State Highway	NH – 12 Is approx. – 25 km / SH- 05 is approx. 308 m.
	Nearest Railway Station	Durg railway station which is approx. 74 km
	Nearest Airport	Swami Vivekananda Airport, Raipur-Approx. 135 km.
	Ecological Sensitive Areas (National Park, Wild Life Sanctuaries, Biosphere Reserve etc.) within 15 km radius.	None
	Reserved / Protected Forest within 15 km radius	No any Reserved / Protected Forest within 10 km radius. chilphi range – 7 km
	Water bodies within 15 km radius of the mine site.	Village Pond about 900 m
	Archaeological Important Place	None
	Seismic Zone	III

Source- PFR/Site Visit

Geological Reserve:

The thickness of soil is about 1.0 m in this area below which **Talpur Limestone Quarry** is observed. For computing the reserve of Talpur Limestone Quarry in quarry area with general outline method is adopted by taking depth 18.0 and Bulk Density is considered as 2.5 tones/cum:

S. No.	Name of the Mine	Total Geological Reserve (MT)	Total Mineable Reserve (MT)	Average Production Capacity (in tons)	Life of the Mine (Yrs.)
1	**M/s Ganpati Metals & Minerals**	1092442	598198	150000	30

Anticipated Life of mine:

The estimated mineable reserve of this area is of the order of **598198 MT** up to 18.0m below soil cover. The Conceptual quarry plan is prepared for the lease period of 30 years and anticipated life of mine is about 30 years.

(Source- Approved mine plan)

Quarrying

Method of Quarrying

quarrying will be earned out by open-cast method adopting a system of benches. Mode of working will be Semi mechanized. Only development work will be carried out by excavator and cutting of stone on mine surface will be carried out by stone crusher machines & Manual labours are deployed for quarrying a loading of sized stone on Truck/tractor. Truck/ tractor will be used for transporting of Limestone.

Proposed five-year quarrying layout plan has been shown in

Plate No. - 7 (Five-year development and production plan) and Cross sections in pfate-8.

A tentative Plan of quarrying, annual program and plan for excavation from yaer to year for five years.

Quarry development work by means of removal of top soil will be taken up from northern part of the area and reclaimed on 7.5 safety zone soil removed on priority, simultaneously quarrying will be started from this area on which development work already completed and rock is exposed prominently during this plan period and will continue in the presiding years. The proposed method of quarry will be open cast.

PROPOSED PRODUCTION PLAN OF FIRST FIVE YEAR:

Table 2, Year wise productions

Year	mRL	Area (m^2)	Depth (m)	Volume (m^3)	Density	Production (MT)	Recovery 90%
1st year	340-338.5	5018	1.5	7527	2.5	18817.5	16935.75
	338.5-337	4757	1.5	7135.5	2.5	17838.75	16054.875
	337-335.5	4504	1.5	6756	2.5	16890	15201
	335.5-334	4258	1.5	6387	2.5	15967.5	14370.75
	334-332.5	4017	1.5	6025.5	2.5	15063.75	13557.375
	332.5-331	3782	1.5	5673	2.5	14182.5	12764.25
	Total					**98760**	**88884**
2nd year	331-329.5	5336	1.5	8004	2.5	20010	18009
	329.5-328	5025	1.5	7537.5	2.5	18843.75	16959.375
	328-326.5	8779	1.5	13168.5	2.5	32921.25	29629.125
	326.5-325	8375	1.5	12562.5	2.5	31406.25	28265.625
	325-323.5	7979	1.5	11968.5	2.5	29921.25	26929.125
	323.5-322	4506	1.5	6759	2.5	16897.5	15207.75
	Total					**150000**	**135000**

3rd year	323.5-322	3086	1.5	4629	2.5	11572.5	10415.25
	340-338.5	1540	1.5	2310	2.5	5775	5197.5
	338.5-337	1441	1.5	2161.5	2.5	5403.75	4863.375
	340-338.5	2918	1.5	4377	2.5	10942.5	9848.25
	338.5-337	2707	1.5	4060.5	2.5	10151.25	9136.125
	337-335.5	9394	1.5	14091	2.5	35227.5	31704.75
	335.5-334	8947	1.5	13420.5	2.5	33551.25	30196.125
	334-332.5	8507	1.5	12760.5	2.5	31901.25	28711.125
	332.5-331	1460	1.5	2190	2.5	5475	4927.5
	Total					**150000**	**135000**
4th year	332.5-331	2000	1.5	3000	2.5	7500	6750
	Total					**7500**	**6750**
5th year	332.5-331	2000	1.5	3000	2.5	7500	6750
	Total					**7500**	**6750**
	Grand Total					**413760**	**372384**

Mineable reserves and anticipated life of the quarry

S. No.	Name of the Mine	Total Geological Reserve (MT)	Total Mineable Reserve (MT)	Average Production Capacity (intonnes)	Life of the Mine (Yrs)
1	**M/s Ganpati Metals & Minerals**	1092442	598198	150000	30

Manpower

The mine will provide direct and indirect employment. Directly employment of about **37 persons** will be employed for extraction/collection, breaking, sorting, sizing/ powdering and loading of minerals in the mining area. All the workers will be employed as contract laborers. Additional employment will be created through transportation.

Water Requirement

The water required is mainly for dust suppression, green belt development, drinking and other domestic purpose during mining operations. Water requirement will meet from hired Tanker supply. The total water requirement will be approx**. 5.0 KLD.**

Detailed are given in item 2.4.2 at chapter 2.

Project Cost

The total cost of the project is **Rs. 59 Lakh** The project generates employment opportunities.

DESCRIPTION OF THE ENVIRONMENT

The main objectives of describing the environment, which may be potentially affected, are (i) to assess present environmental quality and the environmental impacts and (ii) to identify environmentally significant factors. The chapter contains information on existing environmental scenario of the proposed project study area. Studies of various environmental parameters have been done within 10 Km radius area of the proposed project site. The baseline environmental study has been done

Environmental data has been collected in relation to proposed mining for Air, Noise, Water, Soil, Ecology and Biodiversity.

Baseline Environment Status

Ambient Air Quality Monitoring reveals that the minimum and maximum level of PM10 recorded within the study area was in the range of 48.41 µg/m3 to 80.36 µg/m3. The minimum and maximum level of PM2.5 recorded within the study area was in the range of 19.21 µg/m3 to 42.77 µg/m3. As far as the gaseous pollutants SO2 and NOx are concerned, the prescribed CPCB limit of 80µg/m3 for residential and rural areas has never surpassed at any station. The minimum & maximum

concentrations of SO2 were found to be 5.87 µg/m3 to 15.90 µg/m3 respectively. The minimum and maximum level of NO2 recorded within the study area was in the range of was 6.20 µg/m3 to 20.10 µg/m3.. ***The standards of Ambient Air Quality in India are available online at*** ***http://cpcb.nic.in/National_Ambient_Air_Quality_Standards.php***

Analysis of results of ground water reveals the following: -

pH varies from 7.34 to 7.51.

The ground water from all sources remains suitable for drinking purposes as all the constituents are within the limits prescribed by drinking water standards promulgated by Indian Standards IS: 10500

Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 6.99 to 7.85, which shows that the soil is alkaline in nature. Potassium is found to be from 75.95 mg/kg to 238.20 mg/kg. The water holding capacity is found in between 29.00 % to 35.80 %.

The values of noise observed in some of the areas are primarily owing to vehicular traffic and other anthropogenic activities. Noise monitoring results reveals that the maximum & minimum noise levels at day time were recorded in the range of 56.10 dB(A) (Industrial Zone) and 49.70 dB(A) and maximum & minimum noise levels at night time were recorded in the range of 43.4 dB(A) and 38.5 dB(A) respectively.

ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

Impact on Ambient Air Quality

The mining is proposed to be carried out by opencast semi mechanized method. The air borne particulate matter generated by ore and handling operations as well as transportation is the main air pollutant. The emissions of Sulphur dioxide (SO_2), Oxides of Nitrogen (NO_x) contributed by vehicles plying on haul roads are marginal. Prediction of impacts on air environment has been carried out taking into consideration proposed production and net increase in emissions.

Mitigation Measures

1. Water sprinkling will be done on the haul roads twice in a day.

2. The dust generated during the process will be minimized by water spray at the working faces before and after the activity.
3. Plantation will be carried out on approach roads and in Lease boundary.
4. Planning transportation routes of mined material so as to reach the nearest paved roads by shortest route. (minimize transportation over unpaved road);
5. Personal Protection Equipments (PPE) like dust masks, ear plugs etc. will be provided to mine workers.
6. Rock breaker will be used for breaking over size boulders in order to reduce dust and noise generation, which otherwise would be generated due to secondary blasting.
7. Speed limit will be enforced to reduce airborne fugitive dust from vehicular traffic.
8. Deploying PUC certified vehicles to reduce their noise emission.
9. Haul road shall be covered with gravels
10. Spillage from the trucks will be prevented by covering tarpaulin over the trucks.
11. Ambient Air Quality Monitoring will be conducted on regularly basis to assess the quality of ambient air.
12. Proper maintenance of machines improves combustion process & makes reduction in the pollution.
13. Good maintenance and monitoring of fuel and oil will not allow significant addition in the gaseous emission.

NOISE ENVIRONMENT

Noise generated at the mine is due to semi mechanized mining operations and truck transportation activities. The noise generated by the mining activity dissipates within the mine. There is no major impact of the mining activity on the nearby villages. However, pronounced effect of above noise levels is felt only near the active working area.

The impact of noise on the villages is negligible as the villages are far located from the mine workings. Since there is no involvement of major machinery, the impact of noise levels will be minimal.

S. No.	Impact Prediction	Mitigation Measures

1	Noise Impact due to mining activities.	The noise levels from all the sources are periodical and restricted to particular operation.
2	Noise impact due to vehicular movement.	a) Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce the generation of noise. b) Plantation along the sides of approach roads, around office building and mine area will be done to minimize the propagation of noise. c) Personal Protective Equipments (PPE) like earmuffs/earplugs will be provided to all operators and employees working near mining machineries or at higher noise zone. d) Periodical noise level monitoring will be done

BIOLOGICAL ENVIRONMENT

S. No.	Impact Predicted	Suggestive measure
1	Disturbance of free movement/living of wild fauna	• Care will be taken that noise produced during vehicles movement for carrying OB and ore materials are within the permissible noise level. • Care will be taken that no hunting of animals (birds) carried out by labours. • Labours will not be allowed to discards food, plastic etc., which can attract animals near the core site. • Only low polluting vehicle will be allowed for carrying ore materials. All vehicles allowed in the project site area will have to

		provide pollution under control certificate at the end of three months • Noise level will be within permissible limit (silent zone-50dB during day time) as per noise pollution (regulation and control), rules, 2000, CPCB norms
2	Harvesting of flora	• No tree cutting, chopping, lumbering, uprooting of shrubs and herbs should be allowed • Collections of economically important plants will be fully restricted

LAND ENVIRONMENT

S. No.	Impact Prediction	Mitigation Measures
1	Change in the Topography of the Land/Land Degradation	The proposed mining activity is carried out in hilly region and waste land After removal of ore body, a undulating portion will be created. All the broken area will be reclaimed by systematic backfilling and rehabilitated by afforestation so that landscape of the area is improved.
2	Solid waste generation	About 10% mineral wastes will be generated. Top Soil will used on the barrier zone areas on which plantation will be raised.
3	Change in Drainage Pattern	Water flow / course will not be obstructed and natural drains or nallahs will not be disturbed. Run-off from mine and mineral stack will be prevented to avoid being discharged to surroundings, particularly to agricultural land. Garland drains and, catch pits has been constructed to prevent run off affecting the surrounding agricultural land. Green belt has been developed in boundary.

4	Impact on the Agricultural Practice at nearby area due to dust generation	Agriculture activities are practiced nearby areas may impacted because of dust generation but mitigative measures such as regular water sprinkling on active areas for example haul roads, excavation sites will be strictly followed so that impact is minimized.

WATER ENVIRONMENT

S. No.	Impact Prediction	Mitigation Measures
1	Effect on the Ground Water Table	Max Elevation of the ML area is 267m AMSL Ultimate depth of mine is up to 266m AMSL. Ground Water table is 25m to 30m AMSL. The mining activity will not intersect with the ground water table.
2	Wash off from the dumps	No dumping has been proposed.
3	Soil Erosion	Reclamation of the minedout area will be done with plantation to avoid the soil erosion
4	Waste Water generation/ Discharge	Portable Bio-toilets will be used; hence no sewage / liquid effluent will be generated and contamination is also not expected due to percolation.
5	Siltation in nearby agriculture field	Garland drains have been constructed on the sloping side barrier of the ML area. The garland drain has been routed through settling tank to remove suspended solids from flowing into storm water.

ADDITIONAL STUDIES

DISASTER MANAGEMENT PLAN

In order to avoid any danger in the mine site at the end of life of mine a disaster management cell headed by local authority District Collector will be constituted. Police department health authorities,

including doctor, ambulances and so on will have a vital part to play following a disaster along with the mine management, and they will be an integral part of the disaster management plan.

The disaster management plan is aimed to ensure safety of human life and property and protection of environment Following are the objective of the disaster management plan. (i) First Aid to injure.

(ii) Rescue operation and provision of adequate medical facilities to the injured.

(iii) Safety of the human life in the buffer zone if needed.

(iv) Protecting and minimizing damage to property and the environment.

(v) Initially restrict and ultimately bring the incident under control.

(vi) Identify any dead.

(vii) Inform to the administration, DGMS and statutory persons as per Rules.

ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)

The proposed "**Talpur Limestone Quarry**" Mine comes under located at Khasra no. 35/1, 35/2, 35/5, 35/6, 35/10, 35/11, 35/12, 35/15, 35/17, and 35/20, **Village- Talpur, Tehsil - Lohara, District – Kabirdham**, Chhattisgarh, Area- **2.956** Ha, the proposed Talpur Limestone Quarry production capacity from the mine lease is **150000** Tons Annum belongs to M/s Ganpati Metals & Minerals. The lease area is non-forest private land. The proposed method of mining is Semi mechanized Open-Cast with formation of benching.

Mining is a location specific project, and the mine lease has been sanctioned by the Government of Chhattisgarh in favor of the project proponent. The lease was sanctioned after the prospecting of the lease area proved the nature and extent of the deposit, the reserves and the quality of Talpur Limestone Quarry with adequate degree of reliability. Therefore, no alternate site has been considered.

ENVIRONMENTAL MONITORING PROGRAM

In order to maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will complied as per conditions. Regular Monitoring of all the environmental parameters *viz.*, air, water, noise and soil as per the formulated program based on CPCB and MoEF&CC guidelines will be carried out every year in order to detect

any changes from the baseline status. In order to maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will complied as per conditions. For this lessee **M/s Ganpati Metals & Minerals** has formulated an Environment Policy of the mine and constituted an Environmental Management Cell and committed to operate the proposed mine with the objectives mentioned in approved Environment Policy. Regular Monitoring of all the environmental parameters *viz.*, air, water, noise and soil as per the formulated program based on CPCB and MoEF&CC guidelines will be monitored through NABL/MoEF&CC approved laboratory.

PROJECT BENEFIT

The project activity and the management will definitely support the local Panchayat and provide other form of assistance for the development of public amenities in this region. The company management will contribute to the local schools, dispensaries for the welfare of the villagers. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to total plants **300 Nos. of** native species with fruit bearing along with medicinal trees during the mining plan period. The project proponent has allocated **Rs. 3 Lakh/** for CER Activities. The officers of the SPCB will strictly monitor the compliance of lease holder in this regard. Other than this social development of village will be considered as per social activities.

ENVIRONMENTAL COST BENEFIT ANALYSIS

It is considered desirable that the mining project may be implemented. The proposed Talpur Limestone Quarry Mine comes under located at Khasra no. 35/1, 35/2, 35/5, 35/6, 35/10, 35/11, 35/12, 35/15, 35/17, and 35/20, **Village- Talpur, Tehsil - Lohara, District – Kabeerdham, Chhattisgarh**, Area- **2.956** Ha, the proposed production capacity of Talpur Limestone Quarry will be 150000Tons/Annum belongs to M/s Ganpati Metals & Minerals. The lease area is non-forest private land. Proposed cost of project is **Rs. 59 Lakh**

ENVIRONMENTAL MANAGEMENT PLAN

As per above discussion there is no measure impact on the environment due to mining except fugitive emission in the form of dust generated during handling and loading of mineral. The adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Plantation development will be carried out in the mine premises, along the approach roads, around Govt. buildings, schools approx. 200 trees during next one years. It will prove an effective pollution mitigate technique, and help avoid soil erosion during monsoon season. Employment opportunities will be provided to the locals only as providing extraction of minerals from the mine site is the only prevailing occupation for them for their livelihood.

CORPORATE ENVIRONMENT RESPONSIBILITY

2% of capital cost of the project cost will be allotted for the Corporate Environmental Responsibility as per on dated 1st May 2018. Proposed CER budget is **Rs. 1.18 Lakhs.**

For each activity the funds to be earmarked by the proponent will be decided after discussion with the local authority/people and the beneficiaries during Public Hearing. It has been planned to undertake a concurrent evaluation of the activities to be taken up under the CER programme.

Table 8.4: CER Cost

S.no	**Total Cost**	**CER Cost**
1	Rs 59 lakh	Rs 1.18 Lakhs

Table 8.5: CER Cost

S. No	**Activities**	**Fund in lakhs/ year (Capital Cost in lakh)**
1	Mitravan will be developed in the government land of village in association with Gram Panchayat.	1.18
TOTAL		**1.18**

CONCLUSION

From the baseline study and various discussion on probable impacts of all the operational activity, it has been concluded that this project will more positively impact and will generate the revenue and employment in the area. On the above facts and baseline study, the proposed activity is recommended for the commencement with proper mitigation measure as suggested.