

DRAFT ENVIRONMENT IMPACT ASSESSMENT REPORT & ENVIRONMENT MANAGEMENT PLAN of

EXECUTIVE SUMMARY ENGLISH

Mudpar Limestone (Low grade) Quarry

at

Village: Mudpar, Tehsil: Patan, District: Durg, State: Chhattisgarh,

Area 1.84 ha at Khasra No. 31/1 Part, 31/2 Part, 33, 34, 60,

61, 62/1, 62/2, 63/2 Part, 65/1 Part, 65/2 Part, 65/3 Part,

Capacity: 25001.25 Tons per annum

Applicant

Mr. Kamlesh Dewangan



Contact: 8826287364, 9555548342
GSTIN-09AATFP5994MIZY
PAN- AATFP5994M



P & M Solution



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EXECUTIVE SUMMARY

INTRODUCTION

Environmental Impact Assessment (EIA) is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision making tool, which guides the decision makers in taking appropriate decisions for proposed projects. EIA systematically examines both beneficial and adverse consequences of the proposed project and ensure that these impacts are taken into account during the project designing.

The mining lease is located in village of Mudpar, Tehsil- Patan, District- Durg (C.G.) Geographically the QL area extends from Latitude 21°07'21.59"N to 21° 07' 30.52"N and Longitude 81°25'27.58"E to 81°25'30.82"E

The study area of the proposed project comprises of 10 km radius around the mining lease boundary, the map showing the core zone (ML area) and buffer zone (10 km radius from the lease boundary).

The life of the mine is anticipated at 16 years based on the level of exploration and reserve established as per UNFC classification and expecting the market demand will remain at 49950 Tonnes per Year.

Location

The mining lease is located in village of Mudpar, Tehsil- Patan, District- Durg (C.G.) Geographically the QL area extends from Latitude 21°07'21.59"N to 21° 07' 30.52"N and Longitude 81°25'27.58"E to 81°25'30.82"E

Connectivity

The lease area is about 2.5 km from selud . The QL area can be approached from State Highway-22 which is at a distance of 2.5 km. The Nearest Railway Station is Maroda Railway Station at 10 km. The Nearest Airport is Swami Vivekanand Airport at a distance of 33.3km.

Mailing/ Correspondence Address of Project Proponent:

Shri Kamlesh Dewangan
S/o Late Shyam Lal Dewangan
Plot No.B 601, Smriti Nagar Bhilai,
Tehsil-Durg Dist- Durg (C.G.)Phone +91 9893634357

Size of the Project

The total Mine Lease areas considered is 1.84 ha. The proposed production is 25001.25 Tonnes per Year.

Anticipated Life of Project and Cost of the Project

The life of the mine is anticipated at 14years based on the level of exploration and reserve established as per UNFC classification and expecting the market demand will remain at 25001.25 Tonnes per Year.

MINING

Opencast semi mechanized method of mining will be adopted in the lease area. The excavation will be carried out usually by manual labour with the use of jack hammer, excavator, compressor etc. and loaded into tractor/truck/tipper. The Limestone will be suitably blended to be supplied in market. Rest is inter burden.

Year wise Production details

PRODUCTION PLAN FOR FIRST FIVE YEARS

Year wise	mRL	Area (m ²)	Depth (m)	Volume (m ³)	Density	Production (MT)	Recovery 95%
1st year	299-298.5	8150	0.5	4075	2.5	10187.50	9168.75
	298.5 - 297	3950	1.5	5925	2.5	14813.75	13332.37
	Total					25001.25	22501.12
2nd year	298.5 - 297	3619	1.5	5428.5	2.5	13871.25	12214.12
	297- 295.5	3048	1.5	4572	2.5	11430	10287
	Total					25001.25	22501.12
3rd year	297- 295.5	3958	1.5	5937	2.5	14842.5	13358.25
	295.5 - 294	2709	1.5	4063.5	2.5	10158.75	9142.87
	Total					25001.25	22501.12
4th year	295.5 - 294	3756	1.5	5634	2.5	14085	12676.50

**PROJECT: MUDPAR LIMESTONE MINE AN AREA OF 1.84 ha VILLAGE- MUDPAR,
APPLICANT: MR. KAMLESH DEWANGAN**

	294- 292.5	2911	1.5	4366.5	2.5	10916.25	9824.62
	Total					25001.25	22501.12
						.25 =	= 22501
						25001.25	
5 th year	294- 292.5	3033	1.5	4549.5	2.5	11373.75	10236.37
	292.5 - 291	3634	1.5	5451	2.5	13.627.5	12264.75
	Total					25001.25	22501.12
						.25 =	= 22501
					25001.25		
Grand Total						125005.0	112505
						0	

Summary of Land use at different stage will be as follows (in ha):

Articles	Present Land use	Forest Land	Agriculture Land	Stony waste Land	Land use at the end of 5 year of lease period in Hect.	Land use at the end of Conceptual period in Hect.
A. Lease area	1.84	Nil	Nil	Nil	1.84	1.84
A. Quarrying & allied						
1. Area under pit	Nil	Nil	Nil	Nil	0.815	1.277
1. Area of Safety Zone	Nil	Nil	Nil	Nil	0.540	0.540
1. Area for road	Nil	Nil	Nil	Nil	Nil	Nil
1. Area for Infrastructure	Nil	Nil	Nil	Nil	Nil	Nil

**PROJECT: MUDPAR LIMESTONE MINE AN AREA OF 1.84 ha VILLAGE- MUDPAR,
APPLICANT: MR. KAMLESH DEWANGAN**

1. Plantation	***	Nil	Nil	Nil	***	***
1. Storage of Mineral	0.000	Nil	Nil	Nil	0.000	Nil
1. Storage of fines	Nil	Nil	Nil	Nil	Nil	Nil
1. Crushing unit with road	Nil	Nil	Nil	Nil	0.000	Nil
1. Unused area	1.84	Nil	Nil	Nil	0.485	0.023
Total	1.84 hect.	Nil	Nil	Nil	1.84 hect.	1.84 hect.

Systematic working will be done by formation of benches as per M.M.R. 1961. All applicable rules of MMR 1961, Mines Act-1952, MCR-2016 and MCDR-1988 will be followed for safe, scientific & systematic working to follow the principles of safety & conservation of human health & mineral.

5 Disposal of Waste

Nature of waste, its rate of yearly generation and proposals for disposal of waste: The mine waste is in the form of following:-

(1) Top soil: -Only top soil will be removed from the lease area. Total 8151 m³soil will be generated from the area. will be dumped on 5392 m² safety zone area approx. 1.5 m height.

(2) OB and Mine waste: - The waste generated as topsoil will be used for plantation purpose at safety zone.

Selection of Dumping Site:

Only top soil will be removed from the lease area. Total 8151 m³soil will be generated from the area. will be dumped on 5392 m² safety zone area approx. 1.5 m height.

Method and manner of disposal of waste: Top soil excavated from the height of Max 1.0 and will be dumped at safety barriers around the lease area and will be used for plantation purpose at safety zone.

General Features

I) Surface Drainage Pattern

In the Study area of pond near mudpar

ii). Vehicular Traffic Density

The lease area is about 14 km from Raipur. The QL area can be approached from State Highway-22 which is at a distance of 2.5 km. The Nearest Railway Station is Maroda Railway Station at 10 km. The Nearest Airport is Swami Vivekanand Airport at a distance of 33.36 km.

The mode of transport of mineral and waste will be dumpers/trucks/tipper within the QL area. The mineral transportation to the destination industry outside the mining lease area will be by road.

Existing Traffic Scenario & LOS

Road	V	C	Existing V/C Ratio	LOS
-----	830	6000	0.13	A

Source: Capacity as per IRC: 64-1990

V= Volume of Vehicles in PCU's/day & C= Capacity of Road in PCU's/day

The existing Level of Service (LOS) is "A" & "B" i.e. excellent & very good.

V/C	LOS	Performance
0.0 - 0.2	A	Excellent
0.2 - 0.4	B	Very Good
0.4 - 0.6	C	Good / Average / Fair
0.6 - 0.8	D	Poor
0.8 - 1.0	E	Very Poor

Reference: ENVIS Technical Report, IISc, Bangalore.

During Mine operation

Proposed Capacity of mine/annum : 25,001 MT/Annum

No. of working days : 225 days

Proposed Capacity of mine/day : 111.11 or say 111 TPD

Truck Capacity : 8 tonnes

No. of trucks deployed/day : 13.87 or say 14 Trucks

PCU/day (14*3) : 42 trucks

Table 4.2 (ii): Modified Traffic Scenario & LOS

Road	V	C	Modified V/C Ratio	LOS
State Highway 22	$830 + 42 = 872$	6000	0.14	A

Results

From the above analysis it can be seen that the LOS remains same at Highway intersection that is 'A' (Excellent') respectively, as per classification, whereas the LOS for near village intersection will not be changed from "A" (Excellent'). Hence, there will not so much adverse affect on the proposed evacuation roads due to additional traffic. Traffic management has been proposed as given below.

iii) Water demand

No processing of mineral will be done in the mine. Only simple sizing and sorting will be done.

Manpower Requirement

About 30 persons will be getting direct and indirect employment in this mine. The man power will be mostly skilled.

DESCRIPTION OF BASELINE-ENVIRONMENT

This section contains the description of baseline studies of the 10 km radius of the area. The data collected has been used to understand the existing environment scenario around the proposed mining project against which the potential impacts of the project can be assessed. Environmental data has been collected in relation to propose mining for:-

- (a) Land
- (b) Water
- (c) Air
- (d) Noise
- (e) Biological
- (f) Socio-economic

(a) Land Use: The land-use is divided into agriculture land, settlement, and river and forest area as shown in the map. The area is fertile and dominated by the proportion of agriculture land.

There is no National Park, Biosphere reserve, Migratory routes of fauna and National Monument within 10km periphery of the lease area as per secondary data available. There is no habitation within lease area.

Analysis Results of Baseline Environment

(a) Results of Analysis of the Soil.

Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 6.49 to 7.68, which shows that the soil is alkaline in nature. Potassium is found to be from 77.33 mg/kg to 84.40 mg/kg. The water holding capacity is found in between 23.62% to 26.23%.

(b) WATER ENVIRONMENT

The results of Ground water samples are collected at eight locations in the Post-monsoon season as discussed above for organoleptic & physical parameters, general parameters, toxic and biological parameters. The analysis results at the 8 ground water locations and two surface water locations are given below:

- The pH limit fixed for drinking water samples as per IS-10500 Standards is 6.5 to 8.5 beyond this range the water will affect the mucus membrane or water supply system. During the study period, the pH was varying for ground waters from 7.05 to 7.30. The pH values for all the samples collected in the study area during study period were found to be within the limits.
- The desirable limit for total dissolved solids as per IS-10500 Standards is 500 mg/l whereas the permissible limit in absence of alternate source is 2000mg/l. In ground water samples collected from the study area, the total dissolved solids are varying from 333 mg/l to 510 mg/l. The TDS of the samples were within the desirable limit & the permissible limit of 500mg/l & 2000 mg/l respectively.

(c) AMBIENT AIR QUALITY

The Ambient Air Quality Monitoring reveals that of monitoring stations with minimum Concentrations of PM₁₀ were 47.20 µg/m³ at AQ3 and maximum 66.50 µg/m³ at AQ4. The result of PM_{2.5} reveals that the minimum concentration of 26.28 µg/m³ at AQ4 while maximum concentration of 43.58 µg/m³ was found at AQ1.

The gaseous pollutants SO₂ and NO_x were within the prescribed CPCB limit of 80 µg/m³. For residential and rural areas at all stations. The minimum & maximum concentrations of SO₂ were found to be 9.28 µg/m³ at AQ4 & 14.63 µg/m³ at AQ2 respectively. The minimum & maximum concentrations of NO_x were found to be 11.33 µg/m³ at AQ 2 & 20.24 µg/m³ at AQ6 respectively.

The free silica content in PM₁₀ was found to be minimum 1.01 µg/m³ and maximum 3.27 µg/m³ at AQ7 and AQ1 respectively.

(d) NOISE ENVIRONMENT

Noise monitoring reveals that the minimum & maximum noise levels at day time were recorded as 49.54 dB (A) at NQ-6 & 61.23 dB (A) at NQ1 respectively. The minimum &

maximum noise levels at night time were found to be 40.07 dB (A) at NQ6 & 52.41 dB (A) at NQ1 respectively.

There are several sources in the 10 km radius of study area, which contributes to the local noise level of the area. On the commencement of the project, the sound from traffic activities will add to the ambient noise level of the area. This will be kept under check by taking proper suggestive measures.

(e) BIOLOGICAL ENVIRONMENT

The lease area as well as buffer zone area reveals no endangered and endemic species of flora and fauna in the area.

(f) Socio- economic

Population Composition

According to 2011 Population Census the study area has a total population of 73242. Of this 52.0 percent are male and the remaining 48.49 percent are female. Further 15.2 percent of the total population belongs to 0-6 age group. About 51.71 percent of them are male and the remaining 48.3 percent are female.

Sex Ratio

The overall sex ratio in the study area has been worked out to 933 females per 1000 males, which is less than the national average of 933 females per 1000 males.

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 (SO₂), 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	<ul style="list-style-type: none"> • Care will be taken that noise produced during vehicles movement for carrying OB and ore materials are within the permissible noise level.

**PROJECT: MUDPAR LIMESTONE MINE AN AREA OF 1.84 ha VILLAGE- MUDPAR,
 APPLICANT: MR. KAMLESH DEWANGAN**

		<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 flat 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. And rest area is used as water reservoir and used for pisciculture
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 289 m AMSL Ultimate depth of mine is up to 263.5 AMSL. Ground Water table is 40m below ground level. 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 mined out area will be done with plantation to avoid the soil erosion
4	Waste Water generation/ Discharge	Toilets with septic tanks will be used; hence no sewage / liquid effluent will be spread and contamination is also not expected
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 injured.
- (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.

PROJECT BENEFITS AND COSTS EVALUATION

The project will improve the physical infrastructure, social infrastructure like improvement of road conditions water supply during dry season, drainage, educational institutions and improved environmental conditions, etc. The project also provides direct employment to 20 persons and indirect employment to another 19 persons. It increases economic activities, better living standard, educational facility, health facility and infrastructural development. The project will contribute to district mineral fund which will directly provide aid to the local

**PROJECT: MUDPAR LIMESTONE MINE AN AREA OF 1.84 ha VILLAGE- MUDPAR,
APPLICANT: MR. KAMLESH DEWANGAN**

authority to fund the development projects. The management will provide free saplings of fruit bearing and other trees, etc. to local during rain for plantation. This will increase the consciousness in workers and near-by villagers for greenery. Fruit trees can contribute towards their financial gains.

The CER activities are increasingly being taken up by the project proponent not only as fulfilling of mandatory provisions but also for the formation or enhancement of brand image. Besides the above, CER is seen more as a responsibility towards Environment & society rather than a business promotion activity.

Year wise allocation of funds for the above activities proposed to be taken up by the project proponent is provided in the table below:

Tentative allocation of funds for the various activities proposed to be taken up by the project proponent under CER program

S. No	Activities	Fund in lakhs/ year (Capital Cost in lakh)
1	Mitra van will be developed in the government land of Mudpar village in association with Gram Panchayat.	1,12,000
TOTAL		1,12,000

All the activities listed above are for community development as a whole and not for individual person or a family. Each development initiative will be implemented in close collaboration with the village Panchayat. The Project proponent may avail the services of a NGO for the implementation of the above programme, if felt needed.

Budget for Environmental Protection

Sl. No	Description	Capital Cost 1st year (Rs)	Recurring Cost (Rs) 2nd year	Recurring Cost (Rs) 3rd year	Recurring Cost (Rs) 4th Year	Recurring Cost (Rs) 5th Year
1	Pollution Control & Dust Suppression	1,20,000	1,20,000	1,20,000	1,20,000	1,20,000
2	Pollution Monitoring	-	30,000	30,000	30,000	30,000

**PROJECT: MUDPAR LIMESTONE MINE AN AREA OF 1.84 ha VILLAGE- MUDPAR,
APPLICANT: MR. KAMLESH DEWANGAN**

3	Plantation and salary for one gardener (part time basis).	48,000	48000	48000	48000	48000
4	Haul road Maintenance Cost (50 m)	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000
5	Occupational health and safety cost	50000	50000	50000	50000	50000
TOTAL (Rs)		3,18,000	348,000	348,000	348,000	348,000

Budget for Occupational Health

Particulars	Capital Cost (Rs.)	Recurring Cost (Rs.)
For routine checkup	--	1,00,000
Infrastructure &PPE's	50,000	50,000

CORPORATE ENVIRONMENT RESPONSIBILITY

Corporate Environment responsibility (CER) refers to responsibility of a company/ organization to ensure positive impact on environment, consumers, employees, communities, stakeholders and all other members of public sphere. The CER activities are increasingly being taken up by the project proponent not only as fulfilling of mandatory provisions but also for the formation or enhancement of brand image. Besides the above, CER is seen more as a responsibility towards Environment & society rather than a business promotion activity. It is the need of the day for expansion of Environment & occupational welfare. This will not only improve the socio-economic status of the people living in the nearby areas but also enhance the reputation of the project proponent among the local people.

Year wise allocation of funds for the above activities proposed to be taken up by the project proponent is provided in the table below:

Tentative allocation of funds for the various activities proposed to be taken up by the project proponent under CER program

S. No	Activities	Fund in lakhs/ year (Capital Cost in lakh)
1	Mitravan will be developed in the government land of Mudpar village in association with Gram Panchayat.	1,12,000
TOTAL		1,12,000

All the activities listed above are for community development as a whole and not for individual person or a family.

CONCLUSION

As discussed, it is safe to say that the proposed facilities are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigative technique, as well as to serve as biological indicators for the pollutants released from the premises of “Mudpar Low grade Limestone Quarry.”