DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT
& ENVIRONMENT MANAGEMENT PLAN
of

Executive Summary English

Sargipal Limestone Quarry

at

Village – Sargipal, Tehsil-Jagdalpur, District- Bastar, C.G.,

Area: 2.781 ha at

Khasra no. 42/3,43/3 Area: 2.781 ha Capacity –75000.06 Tons per annum

Proposal No. SIA/CG/MIN/425571/2023.

Applicant

Sargipal Limestone Quarry
Prop. Smt. Neelima Belsaria

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

P & M Solution

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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.

ENVIRONMENTAL CLEARANCE

The proposed project is categorized under 1 (a) (<50 hectare of mining lease area) of Gazette Notification dated Sep 14th, 2006 and subsequent amendment made on 01.12.2009 & April 2011. As per the Gazette Notification, 2006. The proposed project is under "B" category no National Park, Biosphere reserve, Migratory routes of fauna and National Monument within 5 Km radius from the project site under 1(a) activity of EIA Notification.

TERMS OF REFERENCE

The State Level Expert Appraisal Committee for mining projects considered the projectBased on the information contained in the documents submitted and the presentation made, the SEAC Committee has prescribed the Terms of Reference (TOR) vide letter no **1163/SEAC, C.G./MINE/2386 Nawa Raipur Atal Nagar Dated 28/07/2023.**

IDENTIFICATION OF PROJECT & PROJECT PROPONENT

The project is proposed to Limestone mining in an area of 2.781 hectares. The Mining sites are situated at Village – Sargipal, Tehsil-Jagdalpur, District- Bastar, State – Chhattisgarh.

Block/ Khasra	Area (Ha)	Location	Production	Consent Letter
42/3, 43/3	2.781	Village- Sargipal Tehsil- Jagdalpur District- Bastar State – Chhattisgarh.	75000.06 Tones/Year	Smt. Nilima Belsaria

The mining project at Sargipal is proposed by the proponent:

Prop. Smt. Nilima Belsaria

Resident at village: Sargipal

Tehsil-Jagdalpur District- Bastar (C.G.)

The above Block have an area of 2.781 Ha, ToR was issued by SEIAA vide letter no. Kramank 1163/S.E.A.C., C.G./Mine/2386 Nava Raipur Atal Nagar

, TOR detail

S. No.	Block No	Vide Letter No	TOR date
1	Sargipal Limestone Deposit	Kramank 1163/S.E.A.C., C.G./Mine/2386 Nava Raipur Atal Nagar	28/7/2023

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LOCATION

The mine lease area is located in Village- Sargipal, Tehsil – Jagdalpur, District - Bastar and State-Chhattisgarh is on Khasra No. 42/3, 43/3 covered in the Survey of India Topo Sheet No – 65 E/16.

Site coordinates:

POINT ID	LONGITUDE	LATITUDE
1	81° 59' 51.87"E	19° 03' 14.00"N
2	81° 59' 55.92"E	19° 03' 14.08"N
3	81° 59' 54.77"E	19° 03' 07.70"N
4	81° 59' 52.82"E	19° 03' 08.08"N
5	81° 59' 52.81"E	19° 03' 10.24"N
6	81° 59' 52.51"E	19° 03' 10.26"N
7	81° 59' 52.02"E	19° 03' 07.38"N
8	81° 59' 51.42"E	19° 03' 07.57"N
9	81° 59' 51.40"E	19° 03' 07.88"N
10	81° 59' 50.60"E	19° 03' 08.04"N
11	81° 59' 50.56"E	19° 03' 08.40"N
12	81° 59' 50.08"E	19° 03' 08.47"N
13	81° 59' 49.99"E	19° 03' 08.79"N
14	81° 59' 49.05"E	19° 03' 09.03"N
15	81° 59' 50.44"E	19° 03' 12.28"N
16	81° 59' 50.65"E	19° 03' 13.29"N
17	81° 59' 51.52"E	19° 03' 13.38"N

Nearest Railway Station: Jagdalpur about 5 km.

Nearest Airport: Nearest Airport Maa Danteshwari Airport Jagdalpur about 5 km. **Nearest Highway:** NH-30 a distance of 2.5 Km in NE direction from the lease area.

RESERVES

General outline method has been used to calculate the reserves of Limestone in the quarry lease area. Because the deposit is simple, all most horizontal and structurally undisturbed and small, it is also slightly hillock and equally flat all over the quarry lease area.

Table No. 10.1: Geological Reserves

S. No	Category	Reserves
1	Total Geological Reserve	10,00,495 MT
2	Mineable Reserve	579144.178 MT
3	Proposed Production	75000.06 MT
4	Ultimate depth of Mining	0.5 m soil + 13.0 m Limestone

MINING

Limestone Mining

Mining will be carried out by open cast semi mechanized bench method. following consideration taken for the proposed mine layout to be carried out systematically & scientifically:

1. All the operations will be carried out semi-mechanized with manually after blasting in the stone. Loading and unloading will be done manually or hire loader.
2. No OB/ waster material will be produced.
3. Some drilling and blasting will be required for removal of stone.
4. Roads will be properly made and sprayed by water for suppression of dust.
5. Roads in the lease area for the movement of loaded trippers/trucks.
6. No processing/beneficiation of Low grade Limestone has been planned or required except sizing & screen of Limestone.

WATER SUPPLY

Water requirement for the proposed project will be provided for the workers for drinking & domestic purpose. Water will also be provided for dust suppression. Fresh water will be only used for drinking purpose. The break up for water requirement is given below:

Table 10.2 Water Requirement

Activity	**Calculation**	**Total water requirement (in KLD)**
Drinking	**54 *45L/1000**	**2.43= 2.5**
Dust Suppression	**150 m* 6m* 0.5 lt * 2 /1000**	**1.0**
Plantation	**500*5L/1000**	**2.5**
Total		**6 KLD**

Drinking: @ 45 lpcd per labor

Dust Suppression: Total haulage road to be water sprinkled * road width *0.5 lt water*2times a day/1000

Plantation: Plants in one year*@ 5 L/per plant/1000

BASE LINE DATA

The proposed project as a center, a radial distance of 10 km is considered as study area for baseline data collection and environmental monitoring. The baseline environment quality was carried out over a radial distance of 10 km around the mining lease area during Post-Monsoon Season covering the months of Oct 2022 to Dec 2022.

Environmental data has been collected in relation to proposed mining for:-

(a) Air

(b) Noise

(c) Water

(d) Soil

(e) Ecology and Biodiversity

(f) Socio-economy

Table BASELINE ENVIRONMENTAL STATUS

Attribute	Baseline status
Ambient Air Quality	The Ambient Air Quality Monitoring reveals that of monitoring stations with minimum Concentrations of PM10 were 33.05 µg/m^3 at AQ5 and maximum 57.31 µg/m^3 at AQ8. The result of PM2.5 reveals that the minimum concentration of 21.12 µg/m^3 at AQ5 while maximum concentration of 44.81 µg/m^3 was found at AQ8. The gaseous pollutants SO2 and NOx were within the prescribed CPCB limit of 80 µg/m^3. For residential and rural areas at all stations. The minimum & maximum concentrations of SO2 were found to be 8.03 µg/m^3 at AQ5 & 13.89 µg/m^3 at AQ8 respectively. The minimum & maximum concentrations of NOx were found to be 9.06 µg/m^3 at AQ 5 & 18.13 µg/m3 at AQ8 respectively. The free silica content in PM10 was found to be minimum 1.01 µg/m3 and maximum 2.63 µg/m^3 at AQ5 and AQ8 respectively.
Noise Levels	Noise monitoring reveals that the minimum & maximum noise levels at day time were recorded as 40.03 dB (A) at NQ-5 & 56.04 dB (A) at NQ8 respectively. The minimum & maximum noise levels at night time were found to be 33.35 dB (A) at NQ5 & 47.41 dB (A) at NQ8 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.

Water Quality	• 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 6.71 to 7.83. 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 2000 mg/l. In ground water samples collected from the study area, the total dissolved solids are varying from 412 mg/l to 485 mg/l. The TDS of the samples were within the desirable limit & the permissible limit of 500 mg/l & 2000 mg/l respectively.
Soil Quality	Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 7.05 to 7.85, which shows that the soil is alkaline in nature. Potassium is found to be from 71 mg/kg to 98 mg/kg. The water holding capacity is found in between 21% to 36%.
Ecology and Biodiversity	There are no Ecologically Sensitive Areas present in the study area, but many reserved forests regions surround the project area.
Socio-economy	The project will throw opportunities to local people for both direct and indirect employment. The study area is still lacking in education, health, housing, water, electricity etc. It is expected that same will improve to a great extent due to proposed mining project and associated industrial and business activities.

ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

AIR ENVIRONMENT

The mining is proposed to be carried out by opencast other than fully 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.

MitigationMeasures

1. Water sprinkling will be done on the haul roads twice in aday.
2. The dust generated during the process will be minimized by water spray at the working faces before and after theactivity.
3. Plantation will be carried out on approachroads 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 unpavedroad);
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 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. • If wild animals are noticed crossing the core zone, it will not be disturbed at all. 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	The proposed mining activity is carried out in hilly region and waste land After removal of ore body, a undulating

	/ Land Degradation	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 backfilled in the mined out 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, catchpits 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 267mAMSL Ultimate depth of mine is up to 266mAMSL. Ground Water table is 25m to 30mAMSL. 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	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.

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 50 persons and indirect employment to another 4 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 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 CSR 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, CSR is seen more as a responsibility towards 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:

Budget for Environmental Protection

Particulars	**Capital Cost**	**Recurring Cost/ year in Rs.**
Environmental Protection		
Dust Suppression & Pollution Control	1,00,000	1,00,000
Environmental Monitoring	30,000	30,000
Green Belt	3,00,000	30,000

Total	**4,30,000**	**1,60,000**

Budget for Occupational Health

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

Budget for Water, Shelter and Sanitation for Mine Worker

Scheme	**Capital Cost (In Rs)**	**Recurring Cost (In Rs)/year**
Drinking water facility	50,000	20,000
Rest shelter	50,000	20,000
Sanitation (Urinal and Toilet)	1,00,000	30,000
Total	2,00,000	70,000

Corporate Environment Responsibility

Corporate Environment Responsibility (CER) refers to the responsibility of a company/organization to ensure positive impact on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere. CER activities are being undertaken by the project proponent not only to meet the mandatory provisions but also for formation or enhancement of brand image. Apart from the above, CER is seen as a responsibility towards the environment and society rather than a business promotional activity. It is the need of the day for the enhancement of environment and business welfare. This will not only improve the socio-economic conditions of the people living in the surrounding areas but will also enhance the reputation of the project proponent among the local people.

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

Allocation of funds for various activities proposed to be taken up by the project proponent under the CER programme

Activities under CER Expenditure	**Expenditure**
Installation of rain water harvesting system in the school premises	1,00,000
R.O. will be installed in the school for drinking purpose	30,000
Separate water tanks will be made for boys and girls toilets in the school	20000
Plantation with tree guards	20000
Total	1,70,000

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.

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