

MINUTES OF THE 126TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 09TH, 10TH, 11TH, 12TH AND 13TH SEPTEMBER, 2025.

The 126th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 09th, 10th, 11th, 12th and 13th September, 2025 under the Chairmanship of Shri Ashok Kumar Singh, IFS (Retd.) in the Conference Room at SEAC, Ranchi.

The following members were present:

1. Shri Ashok Kumar Singh, IFS (Retd.) - Chairman
2. Shri Niranjana Lal Agarwalla - Member
3. Dr. Raju Kumar - Member
4. Shri Ashok Kumar Dubey, IFS (Retd.) - Member (Not present)
5. Dr. Ajay Govind Bhatt - Member
6. Shri Srikant Verma, IFS - Member Secretary

The various projects applied in SEAC for the technical appraisal after the last SEAC meeting held on 23rd, 24th, 25th, 26th, 27th and 28th July, 2025. These projects have been put up for discussions. Besides, these Projects, wherein PP's were asked to provide requisite information / clarifications in the earlier meeting of SEAC, were also considered for appraisal. The Project Proponents have been asked to make technical presentation for the appraisal of their projects before the committee.

The following observations / recommendations were made during the presentation (Project-wise), as under :-

Day 1 : 09th, 2025 [Tuesday]

- A. Corrigendum EC of Bandarjori Stone Deposit of Shri Ravi Shankar Kumar, Village : Bandarjori, Anchal : Jarmundi, Distt. : Dumka, Jharkhand (2.242 Ha) (Proposal no.: SIA/JH/MIN/ 550493 /2025)**

The PA's vide online application no. SIA/JH/MIN/ 550493 /2025 has requested for necessary correction in EC issued vide letter no. EC/SEIAA/2025-26/3812 /2025/305, dated 23.07.2025. The EC issued had inadvertently mentioned the name of the addressee as Fadar Ansari, S/o Late Awedin Ansari, R/o Village : Jogikhop, P.O. : Rajbandh Palasi, P.S. : Shikaripara, Distt. : Dumka, Jharkhand : 816118 in place of Shri Ravi Shankar Kumar, S/o : Shri Upendra Prasad Singh, House no. 298, Ward no. 4, Williams Town, Sri Krishnapuri, P.O. + P.S. : Deoghar, Distt. : Deoghar, Jharkhand.

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2025-26/3812 /2025/305, dated 23.07.2025 shall remain the same.

B. Corrigendum ToR of Paharpur Stone Block of M/s Ravi Shankar Kumar (Prop. : Shri Ravi Shankar Kumar), Village : Paharpur, Tehsil : Dumri, Distt. : Giridih, Jharkhand (6.475 Ha) (Proposal no.: SIA/JH/MIN/ 550548 /2025)

The PA's vide online application no. SIA/JH/MIN/ 550548 /2025 has requested for necessary correction in ToR issued vide letter no. EC/SEIAA/2025-26/3813/2025/256, dated 23.07.2025. The ToR issued had, at one place inadvertently mentioned the project name as Chandangaria Stone Deposit of M/s Swastik Mining Agency (Partners : Shri Nehal Kumar Chawda) at Village : Chandangaria, Anchal : Shikaripara, District : Dumka, Jharkhand (2.917 Ha) in place of Paharpur Stone Block of M/s Ravi Shankar Kumar (Prop. : Shri Ravi Shankar Kumar), Village : Paharpur, Tehsil : Dumri, Distt. : Giridih, Jharkhand (6.475 Ha).

The SEAC considered the same and recommends for issuance of corrigendum ToR with corrected details as stated above. Other terms & conditions mentioned in the previous ToR letter no. EC/SEIAA/2025-26/3813/2025/256, dated 23.07.2025 shall remain the same.

C. Consideration of proposals :

1. Transfer of EC from M/s The Indian Steel and Wire Products Limited at Jamshedpur Notified Area Committee, Distt. : East Singhbhum, Jharkhand to Tata Steel Limited Wires Division Jamshedpur (TSWDJ)

(Proposal No : SIA/JH/ IND1/ 543778/2025)

As per the details provided by the Project Authorities, the effective date of amalgamation amongst Tata Steel Limited and M/s The Indian Steel and Wire Products Limited is September 1, 2024.

The application for Transfer of EC was applied online on 04.07.2025. As this is within 01 year from the date of amalgamation, the transfer of EC is to be considered directly by SEIAA under section 11 of EIA Notification, 2006.

Hence, SEIAA may take necessary action in this regard.

2. Kumhri Stone Mine of M/s Vishwanath Stone Mines & Crusher (Prop. : Shri Manoj Kumar), Village : Kumhri, Thana : Chas, Distt. : Bokaro, Jharkhand (2.19 Ha).

(Proposal no.: SIA/JH/MIN/ 546061 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Bokaro).

The project has been granted EC by DEIAA, Bokaro vide letter no. EC/DEIAA/2016-17/01/2016/4601/M, dated 22.12.2016. Production Capacity as per EC letter is 154512 Tonne/Year.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Bokaro which was listed for consideration on 09.09.2025. However, for want of fresh certificate from DMO this was taken up for consideration on 11.09.2025 after receipt of the fresh certificate from the DMO.

As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ -96 µg/m³ PM_{2.5} -567 µg/m³ SO₂ -18.2 NO₂ - 19.0 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1049/M, dated 29.07.2025 by DMO, Bokaro is within the permissible limit of EC.

The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 2039, dated 23.07.2025.

A certification of the compliance of the conditions of previous EC issued by JSPCB has been submitted to SEAC. The Committee desired to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 151776 Tonnes per year / 50592 Cum per year.

Project and Location Details:

Sl. No.	Parameter	Details
1	Project Name	: Kumhri Stone Mine Project Type – Stone Mine

2	Lessee:	:	M/S Vishwanath Stone Mines & Crusher Sri Manoj Kumar S/o Late Vishwanath Manjhi
3	Lessee Address	:	R/o - Qr No -2-257, Sector - 2/B, PO HPO, Bokaro Steel City, Bokaro, District - Bokaro, Jharkhand – 827001.
4	Mine Lease Area	:	2.19 Ha.
5	Type of Land	:	Non-Forest Raiyati Land
6	Project Cost	:	Capital Cost: Rs.131.4 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 8.76Lakhs Recurring Cost: Rs. 5.80 Lakhs
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)
9	Mineable Reserves	:	5,52,900cum. 16,58,700tonnes
10	Mine Life	:	Up to the lease period i.e. 17/10/2017 to 16/10/2027
11	Man power	:	28 Person
12	Water Requirement	:	4.626 KLD., Say 5 KLD (Drinking: 0.420 KLD, Dust Suppression: 1.200 KLD, Plantation: 4.626 KLD).
13	Water Source	:	From Nearby villages tankers
14	DG Set / power	:	20 KVA D.G. Set proposed
15	Crusher	:	No
16	Nearest Water Body	:	Damodar River – 1.18 Km in N direction.
17	Nearest Habitation	:	Minor Habitation within 500m as per KML. The Project Proponent has submitted compliance to Office Memorandum No. Z-11013/57/2014-IA.II (M) dated 29/10/2014, issued by the Ministry of Environment, Forests and Climate Change (MoEF&CC), stating that the mining activities will have no adverse impact on the nearest habitation.
18	Nearest Rail Station	:	The national highway-18 is at a distance of about 2.52 km from the lease area & easily approachable from village road.
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is about 101.56 km SW direction (areal distance) away from applied area.
20	Nearest Forest	:	Divisional Forest Officer(Bokaro) letter no.- 1227, dated 16 / 04 / 2016 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	The national highway-18 is at a distance of about 2.52 km from the lease area & easily approachable from village road.
22.	Approach Road	:	Distance of Approach Road 300 m

CO-ORDINATES

Point Name	Longitude	Latitude
1	086° 13' 45.14215620" E	23° 42' 02.19592341" N
2	086° 13' 45.60538792" E	23° 42' 01.99029191" N
3	086° 13' 46.07121920" E	23° 42' 01.75629430" N
4	086° 13' 46.98736529" E	23° 42' 01.26723848" N
5	086° 13' 47.80656353" E	23° 42' 00.90286062" N
6	086° 13' 48.53494347" E	23° 42' 00.60341119" N
7	086° 13' 48.34280442" E	23° 41' 58.63918271" N
8	086° 13' 48.16843151" E	23° 41' 56.85656453" N
9	086° 13' 48.01627009" E	23° 41' 55.30100553" N
10	086° 13' 47.88467384" E	23° 41' 53.95567893" N
11	086° 13' 47.19673863" E	23° 41' 54.17714691" N
12	086° 13' 46.66518341" E	23° 41' 54.34160126" N
13	086° 13' 46.14988308" E	23° 41' 54.48540887" N
14	086° 13' 45.44567812" E	23° 41' 54.66813965" N
15	086° 13' 44.59327877" E	23° 41' 54.92691362" N
16	086° 13' 44.24493154" E	23° 41' 54.95189856" N
17	086° 13' 44.50362530" E	23° 41' 57.04056405" N
18	086° 13' 44.77876190" E	23° 41' 59.26196927" N
19	086° 13' 44.97869498" E	23° 42' 00.87618268" N

LAND DETAILS

Khata no.	Plot no.
110	845 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (Loi) has been issued by District Mining Officer, Bokaro vide letter no. 4062/Khanan, dated 18.08.2016. ii. Lease deed : Lease deed has been executed for the period of 12.10.2017 to 11.10.2022. Further the Court of Deputy Commissioner –cum- District Magistrate, Bokaro in Misc appeal (Mining)-48/2024-25, M/s Viswanath Stone Mines and Crusher, Pro. Manoj Kumar vs District Mining Officer, Bokaro (State) passed an order on 12.09.2024 as follows : <i>"In the light of above facts and circumstances this appeal is hereby allowed and the renewal of the mining lease will be applicable from the date of exhaustion of earlier lease</i>

			<i>agreement i.e. 17.10.2017 to 16.10.2027."</i>
2	CO	:	The CO, Chas (Bokaro) vide letter no. 1140, dated 13.06.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar.
3	DMO Cluster	:	DMO, Bokaro vide memo no. 583/M, dated 30.04.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 811, dated 15.05.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Bokaro Forest Division vide letter no. 1227, dated 16.04.2016 certified that the distance of notified forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Bokaro vide E-mail dated 09.09.2025 has forwarded memo no. 1209/M, dated 09.09.2025 stating that inadvertently this lease was not included in the approved DSR of Bokaro District. He has further requested that this project may be considered as being part of the DSR. The Committee accepted the request of the DMO, Bokaro.
7	Gram Sabha	:	Gram Sabha conducted on 13.02.2016.
8	Mine Plan / Scheme Approval	:	i. Mining Plan approved by Deputy Director (Mines), Dhanbad vide Memo No. 495, dated 29.09.2016. ii. Review of mining plan approved by The Assistant Director, Geology District Geological Office, Bokaro vide Memo No. 97, dated 03.05.2025.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Bokaro vide letter no. EC/DEIAA/2016-17/01/2016/4601/M, dated 22.12.2016.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 2039, dated 23.07.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1943743 /2018 /102, dated 23.01.2018.

12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DHN/CTO-2146641 /2018/24, dated 07.03.2018 valid up to 30.09.2022.
13	Production Report	:	Production report issued by DMO, Bokaro vide memo no. 1049/M, dated 29.07.2025.
14	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized Method
2	Quarry Area	:	1.733Ha Life of Mine – up to the lease period i.e. 17/10/2017 to 16/10/2027
3	Waste Generation	:	No, O.B (During Scheme plan period)
4	Stripping Ratio	:	01:00
5	Working Days	:	300
6	Benchs: size	:	6 m x 6 m
7	Elevation of Mine	:	186 m AMSL – 178m AMSL
8	Ground Level Elevation	:	178 m AMSL
9	Ultimate Pit Depth	:	170 m AMSL
10	Water Table	:	150m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	61.85 kg kg Slurry explosives/day (will be obtain from licenced Vendors)
13	Diesel/Fuel requirement	:	HSD – 259.44 liters / day (77.83 KL/year)0 Litre per day

Production Details

Development Year	Production of stone Cum/Year	Production of stone in Tonnes/Year
(2022-2023) (Lapsed Period)	0	0
(2023-2024) (Lapsed Period)	0	0
(2024-2025) (Lapsed Period)	0	0
(2025-2026)	50592	151776
(2026-2027)	37632	112896
Total	88224	264672

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Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Quarry	0.310	1.733	1.733	Waterbody
2	Safety Barrier/Green Belt	0.000	0.457	0.457	Plantation
3	Excavated	1.880	0.000	0.000	-
	TOTAL	2.190	2.190	2.190	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Green belt/Safety zone	0.457 Ha	1142
2	Along Approach Road	0.300 km	400
TOTAL			1542

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

PROJECT COST

Sl. No.	Head	Capital Cost Rs. in Lakhs	Recurring Cost Rs. in Lakhs
1.	Government Revenue (Dead Rent& Royalty)	25.00	--
2.	Cost of infrastructure	5.0	0.50
3.	Mining Machineries owned by applicant Wagon Drill -01 Tullu Pump-01 Tippers 25 tons-02 D.G. Set-01	75.50	--
	Mining Machineries on hired basis-	--	08.00

	(Excavator- 01, Tipper-02)		
4.	Lease Agreement(lump-sum)	--	01.35
5.	Statutory Clearance & Others	5.00	-
6.	Contingency	11.05	-
Total		121.55	9.85
Budget for Environment Management		8.76	5.80

COST PROPOSED FOR EMP

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation (i) Gabion Plantation along approach road) = 400 X 800 = INR 320,000 (ii) Plantation within lease area/Green Belt) = 1142 X 400 = INR 4,56,800 (also includes Fertilizer, Pesticides, Maintenance)	7,76,800	77,680
3	Fencing	1,00,000	-
4	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) -Rs.12,420 - Noise 24 hrs (3 point) -Rs.21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220
Total		8,76,800	5,80,900

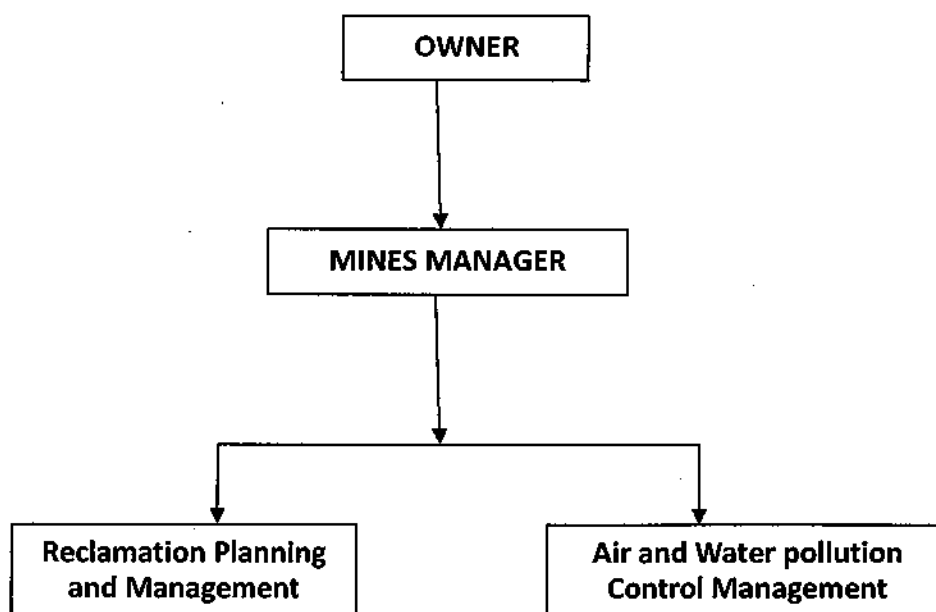
Environment Monitoring Programme:

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Solid Waste Management

NO, O.B shall be generated during the scheme period which shall be used in backfilling the mine void

Organization Structure



Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at quarry floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generates gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.

- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.

- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

The PAs have submitted a certificate from DMO vide letter no. 1020/Khanan, dated 22.07.2025 stating that this lease may be considered as part of the potential area in the approved DSR of Bokaro District. However, the Committee of the view that this lease should have been included in Chapter 9 (existing lease holder) of the approved DSR.

Hence, the PAs were asked to obtain a fresh certificate from the DMO regarding the above matter.

The DMO, Bokaro vide E-mail dated 09.09.2025 has forwarded memo no. 1209/M, dated 09.09.2025 stating that inadvertently this lease was not included in the approved DSR of Bokaro District. He has further requested that this project may be considered as being part of the DSR.

The Committee accepted the request of the DMO, Bokaro and took up the project for consideration on 11.09.2025.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated

12.12.18 decided that the proposal for Kumhri Stone Mine of M/s Vishwanath Stone Mines & Crusher (Prop. : Shri Manoj Kumar), Village : Kumhri, Thana : Chas, Distt. : Bokaro, Jharkhand (2.19 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

3. Ghansikhap Stone Mine of Shri Rana Sangram Singh, Village : Ghansikhap, Thana : Pipra, Distt.: Palamau, Jharkhand (1.076 Ha).

(Proposal no.: SIA/JH/MIN/545001 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project was listed for consideration on 09.09.2025. However, for want of certified copy of CO certificate by the DMO, this was taken up for consideration on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 62100 cum. (max.) / 173880 Tons (max.)

Project and Location Details:

I	Parameter	Details
1	Project Name	: Ghansikhap Stone Mine
2	Lessee:	: Shri Rana Sangram Singh
3	Lessee Address	: Shri Rana Sangram Singh, S/O Shri Haridev Singh, R/O Vill + P.O. – Babubel, P.S. – Haldi, Dist – Baliya, U.P., Current Address – Vill + P.O. – Chhatarpur, Palamu.
4	Mine Lease Area	: 1.076 Ha
5	Type of Land	: Non-Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 151.25 Lakhs
7	EMP Budget	: Capital Cost: Rs. 12.444Lakhs Recurring Cost: Rs. 6.176 Lakhs/year
8	New or Expansion	: New
9	Mineable Reserves	: Cum.: 278748 Tonnes: 780494
10	Mine Life	: 5 Years
11	Man power	: 25
12	Water Requirement	: 9 KLD(Drinking: 0.375 KLD, Dust Suppression: 2.16 KLD, Plantation: 6 KLD)
13	Water Source	: Will be sourced from authorized vendors
14	DG Set / power	: 20 KVA D.G. Set proposed
15	Crusher	: No Crusher
16	Nearest Water Body	: Batre River flowing NE to SW at 600 m West Direction from the Mine site.
17	Nearest Habitation	: Minor Habitation within 500 m as per KML. The Project Proponent has submitted compliance to Office Memorandum No. Z-11013/57/2014-IA.II (M) dated 29/10/2014, issued by the Ministry of Environment, Forests and Climate Change (MoEF&CC), stating that the mining activities will have no adverse impact on the nearest habitation.

18	Nearest Rail Station	:	Japla Railway Station is at areal distance of 24 km in NW direction.
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at areal distance of 169 km SE direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer, Medninagar, vide memo no.-2065 Dated- 10.07.2024.
21	Road & Highways	:	The distance of Approach Road is 540m, after that this road connects to Aurangabad – Rajhara – Daltenganj Road.
22	Approach Road	:	The distance of approach road is 540m.

CO-ORDINATES

Point Name	Latitude	Longitude
1	N24° 27' 08.78860069"	E084° 13' 11.28169422"
2	N24° 27' 08.73895236"	E084° 13' 11.48483384"
3	N24° 27' 08.63375422"	E084° 13' 11.82763528"
4	N24° 27' 08.08156445"	E084° 13' 11.86327131"
5	N24° 27' 07.41597706"	E084° 13' 11.90622548"
6	N24° 27' 06.68435952"	E084° 13' 11.95344089"
7	N24° 27' 06.49225138"	E084° 13' 12.71404866"
8	N24° 27' 06.27684373"	E084° 13' 13.56690508"
9	N24° 27' 06.09667584"	E084° 13' 14.28023758"
10	N24° 27' 05.79118288"	E084° 13' 14.28959982"
11	N24° 27' 05.73822823"	E084° 13' 14.48760396"
12	N24° 27' 05.42688846"	E084° 13' 14.50128350"
13	N24° 27' 05.10620751"	E084° 13' 14.44998036"
14	N24° 27' 05.31665282"	E084° 13' 13.43517240"
15	N24° 27' 05.51468125"	E084° 13' 12.54320624"
16	N24° 27' 05.72951420"	E084° 13' 11.58165418"
17	N24° 27' 05.96155149"	E084° 13' 10.64433413"
18	N24° 27' 06.47298959"	E084° 13' 10.53733292"
19	N24° 27' 07.19218254"	E084° 13' 10.52984960"
20	N24° 27' 07.18890600"	E084° 13' 10.04482079"
21	N24° 27' 07.09422731"	E084° 13' 09.11922005"
22	N24° 27' 07.03907141"	E084° 13' 08.08644029"
23	N24° 27' 07.29180925"	E084° 13' 07.87044900"
24	N24° 27' 07.93616765"	E084° 13' 07.66003949"
25	N24° 27' 08.74363017"	E084° 13' 07.58655802"
26	N24° 27' 09.05769368"	E084° 13' 07.36666337"
27	N24° 27' 09.10101465"	E084° 13' 08.58052036"
28	N24° 27' 09.14925416"	E084° 13' 09.93219514"
29	N24° 27' 09.18724265"	E084° 13' 10.99663586"
30	N24° 27' 08.93567630"	E084° 13' 11.00931280"
31	N24° 27' 08.78860069"	E084° 13' 11.28169422"

LAND DETAILS

Khata no.	Plot no.
02	54 (P), 55 & 56
11	51 (P) & 53

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Palamau, Medininagar vide letter no. 1110/M, dated 14.05.2025.
2	CO	:	The CO, Pipra, Palamau vide letter no. 09, dated 17.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Palamau, Medininagar vide memo no. 1459/M, dated 05.06.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 409, dated 20.06.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Divisional Forest Officer, Medininagar Forest Division vide letter no. 2065, dated 10.07.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project boundary.
6	DSR	:	The DMO, Palamau, Medininagar has certified vide memo no. 1899/M, dated 21.07.2025 that this project is mentioned in approved DSR of Palamau District as a potential village (Page no. 141).
7	Gram Sabha	:	BDO, Pipra, Palamau vide letter no. 734, dated 09.10.2024 informed that Gram Sabha conducted on 01.07.2024.
8	Mine Plan Approval	:	Mine plan approved by Assistant Director, Geology, District Geological Officer, Palamau, Jharkhand vide memo no. 104, dated 16.07.2025.

9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mining plan has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized Method
2	Quarry Area	:	0.660 Ha. Life of Mine – 5 Years
3	Waste Generation	:	46046cum
4	Stripping Ratio	:	01:0.05
5	Working Days	:	300
6	Bench: size	:	6 m x 6 m
7	Elevation of Mine	:	183 m- 181 m AMSL
8	Ground Level Elevation	:	181 m AMSL
9	Ultimate Working Depth	:	155mAMSL
10	Water Table	:	146m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	66.52 kg Nitro mix explosives/day, will be obtained from lessened vendors.
13	Diesel/Fuel requirement	:	HSD – 287.16 liters / day (86.14 KL/year)

Production Details

Year	Production of Stone / Year		Removal of O.B.
	Cum	Tonnes	Cum
1st	62100	173880	21620
2nd	59354	166191	24426
3rd	55932	156610	0
4th	51094	143063	0
5th	50268	140750	0
Total	278748	780494	46046

Land Use pattern

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Proposed Land use for current plan period (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.
1	Mining Quarry	-	0.660	0.505	Water body

2	Backfilled area	-	-	0.155	Plantation
3	Garland drain	-	0.028	0.028	Plantation
4	Settling Tank	-	0.003	0.003	-
5	Safety Zone	-	0.385	0.385	Plantation
6	Unutilized	1.076	-	-	-
Total		1.076	1.076	1.076	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Garland drain/Safety Zone	:	0.413 Ha	1033
2	Backfilled area	:	0.155 Ha.	388
3	Along Approach Road	:	540m	720
TOTAL				2141

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.
- Project Cost**

Sl. No.	Head	Capital Cost Rs. in Lakhs	Recurring Cost Rs. in Lakhs
1.	Government Revenue (Dead Rent& Royalty)	27.00	--
2.	Cost of infrastructure	5.0	0.5
3.	Mining Machineries owned by applicant a. Wagon Drill -02 b. Compressor-01 c. Tippers 25 tons-02 d. Diesel Pump-01 e. D.G. Set-01	100.5	--
	Mining Machineries on hired basis-	--	10.5

	(Excavator- 01, Tipper-4		
4.	Lease Agreement(lump-sum)	--	0.66
5.	Statutory Clearance & Others	5.0	-
6.	Contingency	13.75	-
Total		151.25	11.66
Budget for Environment Management		12.44	6.17

• **Budget for Environmental Management**

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Fencing	1,00,000	--
3	Plantation 720 X 800 = Rs 5,76,000 Gabion Plantation along approach road) 1421 X 400 =5,68,400 (Plantation within lease area/Green Belt) (also includes Fertilizer, Pesticides, Maintenance)	11,44,400	11,44,40
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs.21,000 • Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 <i>Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022</i>	--	2,03,220
Total		12.444	6.176

Environment Monitoring Programmed

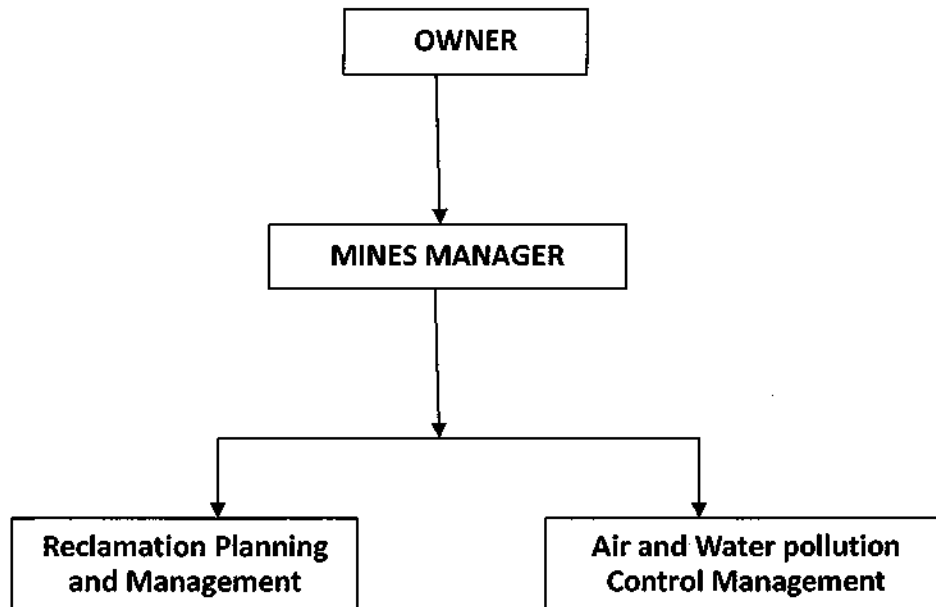
SL. No.	Description	No. of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly

4.	Soil	3 Station	6 Monthly

Solid Waste Management

46046cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at quarry floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generates gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)

- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ghansikhap Stone Mine of Shri Rana Sangram Singh, Village : Ghansikhap, Thana : Pipra, Distt.: Palamau, Jharkhand (1.076 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

4. Pagar Stone Mine of M/s Maa Gayatri Stone Works (Partners : Shri Chandan Kumar Gupta), Village : Pagar, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.594 Ha).

(Proposal no.: SIA/JH/MIN/ 546614 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 90,488 cum. / 2,53,365 Tons(max).

Project and Location Details:

I	Parameter	Details
1	Project Name	: Pagar Stone Mine
2	Lessee:	: M/s Maa Gayatri Stone Works Partner – 1. Shri Chandan Kumar Gupta 2. Shri Chetkar Prasad Sah
3	Lessee Address	: 1. Shri Chandan Kumar Gupta, S/o Late Binod Lal Gupta, Vill – Jamuataav, P.O. – Nawagadh, P.S. – Baghmara, Dist.

			Dhanbad 2. Shri Chetkar Prasad Sah, S/o Late Shivnarayan Sah, Head- Police Station- Kelabari, Thana- Radhanagar, District- Sahebganj (Jharkhand)
4	Mine Lease Area	:	2.594 Ha
5	Type of Land	:	Non-Forest Raiyati Land
6	Project Cost		Capital Cost: Rs. 157.74 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 24.86 Lakhs Recurring Cost: Rs. 7.36 Lakhs/year
8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 822750 Tonnes: 2303700
10	Mine Life	:	10 Years
11	Man power	:	31 Person
12	Water Requirement	:	17.98 KLDsay 18 KLD (Drinking: 0.465 KLD, Dust Suppression: 0.56KLD, Plantation: 16.96KLD)
13	Water Source	:	Will be sourced from authorized vendors
14	DG Set / power	:	20 KVA D.G. Set proposed
15	Crusher	:	Yes (250 TPH)
16	Nearest Water Body	:	Ganga River flowing at 12 km in East Direction
17	Nearest Habitation	:	Minor Habitation within 500m as per KML. The Project Proponent has submitted compliance to Office Memorandum No. Z-11013/57/2014-IA.II (M) dated 29/10/2014, issued by the Ministry of Environment, Forests and Climate Change (MoEF&CC), stating that the mining activities will have no adverse impact on the nearest habitation.
18	Nearest Rail Station	:	Kalian Chak is at Aerial distance of 5.27 km in SE direction.
19	Nearest Air Port	:	Deoghar Airport is at Aerial distance of 119.75 km SW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer, Sahibganj, vide memo no.-2636 Dated- 16.10.2020
21	Road & Highways	:	The distance of Approach Road is 140m, after that, this road connects to village road.
22	Approach Road	:	The distance of approach road is 140m.

CO-ORDINATES

Point ID	Latitude	Longitude
1	25° 02' 56.56509960" N	087° 41' 11.98143240" E
2	25° 02' 56.28623280" N	087° 41' 12.95042640" E
3	25° 02' 56.01292440" N	087° 41' 13.93422360" E

4	25° 02' 55.75926840" N	087° 41' 14.86715280" E
5	25° 02' 55.51214640" N	087° 41' 15.77520600" E
6	25° 02' 55.26074760" N	087° 41' 16.69599600" E
7	25° 02' 55.00588200" N	087° 41' 17.62379880" E
8	25° 02' 54.78368640" N	087° 41' 18.46143240" E
9	25° 02' 54.57458400" N	087° 41' 19.24969920" E
10	25° 02' 54.35399400" N	087° 41' 20.09176440" E
11	25° 02' 54.13264080" N	087° 41' 20.93794800" E
12	25° 02' 53.33132400" N	087° 41' 20.91677280" E
13	25° 02' 52.49173560" N	087° 41' 20.87510280" E
14	25° 02' 51.52838640" N	087° 41' 20.81265000" E
15	25° 02' 50.53074000" N	087° 41' 20.74880040" E
16	25° 02' 49.55085960" N	087° 41' 20.69343600" E
17	25° 02' 49.92327960" N	087° 41' 19.76072640" E
18	25° 02' 50.33213880" N	087° 41' 18.74274360" E
19	25° 02' 50.66151000" N	087° 41' 17.92249800" E
20	25° 02' 50.98064280" N	087° 41' 17.12955840" E
21	25° 02' 51.25749720" N	087° 41' 16.44168480" E
22	25° 02' 51.99528840" N	087° 41' 16.46217600" E
23	25° 02' 52.66037040" N	087° 41' 16.48065120" E
24	25° 02' 53.04261480" N	087° 41' 15.55953000" E
25	25° 02' 53.41413120" N	087° 41' 14.67462840" E
26	25° 02' 53.79008280" N	087° 41' 13.77847320" E
27	25° 02' 54.14803080" N	087° 41' 12.93180000" E
28	25° 02' 54.48087960" N	087° 41' 12.15474720" E
29	25° 02' 54.79451880" N	087° 41' 11.42253960" E
30	25° 02' 55.38920280" N	087° 41' 11.58192600" E
31	25° 02' 55.94918280" N	087° 41' 11.76915840" E

LAND DETAILS

Khata no.	Plot no.
02	27 (P)
06	24 (P) & 26 (P)
11	25 (P) & 02 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Sahibganj vide letter no. 1290/M, dated 11.07.2025.
2	CO	:	The CO, Taljhari vide letter no. 543, dated 25.07.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II and also mentioned that the Barsati Nala at a distance of 200 meters of proposed project site. During the appraisal it was seen from the KML that habitation also exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 1300/M, dated 12.07.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 405, dated 17.02.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2636, dated 16.10.2020 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	The DMO, Sahibganj has certified vide memo no. 1301/M, dated 12.07.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 192).
7	Gram Sabha	:	Gram Sabha conducted on 07.03.2020.
8	Mine Plan Approval	:	Mine plan approved by DMO, Sahibganj vide letter no. 1363, dated 17.07.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 1299/M, dated 12.07.2025 certified that said project falls under grid no. 56 and production is

		within the over all permissible production limit. The DMO also stated that this certificate is issued in the light of order passed by Hon'ble NGT on 22.12.2021 in OA No. 23/2017/EZ, O.A. no. 776/2018 and O.A. no. 373/2019. It also states this certificate is issued in compliance of report of Expert Committee.
10	Qualified Person :	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mining plan has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized Method	
2	Quarry Area	:	1.776 Ha	Life of Mine – 10 Years
3	Waste Generation	:	51300cum	
4	Stripping Ratio	:	01:0.04	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	275 m-220 m AMSL	
8	Ground Level Elevation	:	220 m AMSL	
9	Ultimate Working Depth	:	214 m AMSL	
10	Water Table	:	197m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	83.16 kg Nitro mix explosives/day, will be obtained from lessened vendors.	
13	Diesel/Fuel requirement	:	HSD – 314.88 (103.9104) Litres /day	

Production Details

Year	Production of Stone / Year		Removal of O.B.
	Cum	Tonnes	Cum
1st	86925	243390	27300
2nd	81795	229026	6450
3rd	90488	253365	8550
4th	88493	247779	9000
5th	85785	240198	0
Total	433485	1213758	51300

Land Use pattern

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Proposed Land use for current plan period (Ha.)	Land used in remaining period of the end of life of mine. (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.
1	Mining Quarry	-	1.583	1.776	0.408	Water body
2	Dead Benches	-	-	-	1.368	Plantation
3	Dumping	-	0.119	-	-	-
4	Garland Drain	-	0.038	0.038	0.038	Plantation
5	Safety Zone	-	0.530	0.530	0.530	Plantation
6	Unutilized	2.594	0.074	-	-	-
7	Crusher	-	0.250	0.250	0.250	Plantation
Total		2.594	2.594	2.594	2.594	-

ENVIRONMENT MANAGEMENT Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Garland Drain & Safety Zone	:	0.568 Ha	1420
2	Dead Bench	:	1.368 Ha.	3420
3	Crusher	:	0.250 Ha.	625
4	Along Approach Road	:	140 m	188
TOTAL				5653

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Project Cost

Sl. No.	Head	Capital Cost Rs. in Lakhs	Recurring Cost Rs. in Lakhs
1.	Government Revenue (Dead Rent & Royalty)	26.00	--

2.	Cost of infrastructure	5.0	0.5
3.	Mining Machineries owned by applicant • Wagon Drill -03 • Compressor-01 • Tippers 25 tons-02 • Water Tanker- 01 • Diesel Pump-01 • D.G. Set-01	107.4	10.74
	Mining Machineries on hired basis- (Excavator- 01, Tipper-6)		18.00
4.	Lease Agreement(lump-sum)	---	1.60
5.	Statutory Clearance & Others	5.0	-
6.	Contingency	14.34	-
Total		157.74	30.84
Budget for Environment Management		24.86	7.36

• **Budget for Environmental Management**

Sl. No.	Particulars	Capital Cost in lakhs.	Recurring Cost in lakhs per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3
2	Fencing	1.5	--
3	Plantation 188 X 800 = Rs 1,50,400 Gabion Plantation along approach road) 5465 X 400 = 21,86,000 (Plantation within lease area/Green Belt) (also includes Fertilizer, Pesticides, Maintenance)	23.36	2.33
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs.21,000 • Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least	--	2.03

Sl. No.	Particulars	Capital Cost in lakhs.	Recurring Cost in lakhs per year
	two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 <i>Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022</i>		
Total		24.86	7.36

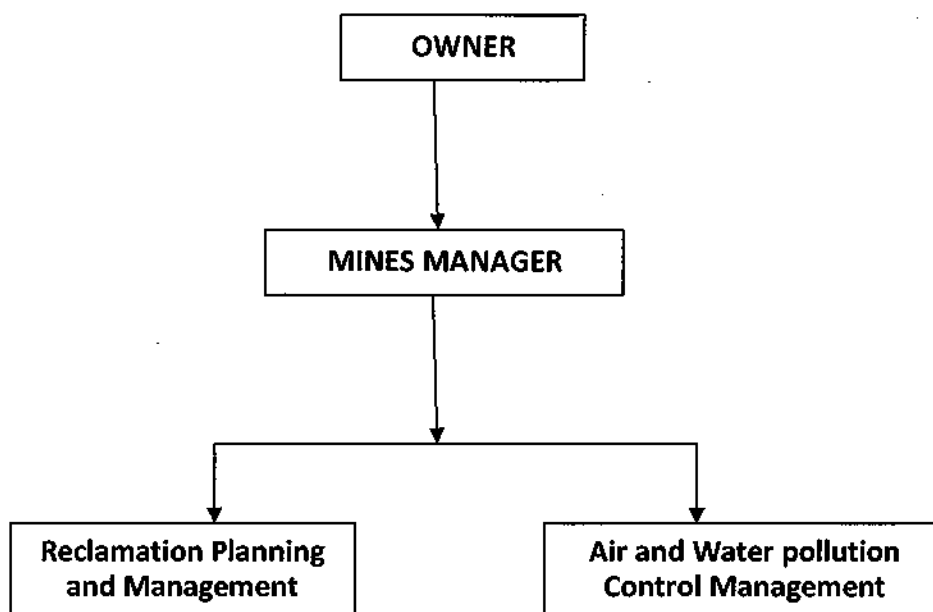
Environment Monitoring Programmed

SL. No.	Description	No. of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Solid Waste Management

51300cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at quarry floor. Arrangements would be made for pumping out this water regularly during rainy season.

- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generates gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5

5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

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- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard.
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Pagar Stone Mine of M/s Maa Gayatri Stone Works (Partners : Shri Chandan Kumar Gupta), Village : Pagar, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.594 Ha) is recommended for grant of EC. The various conditions for grant of

EC is enclosed as Annexure – I along with following specific conditions :

- I. That the Deputy Commissioner, Sahibganj will ensure compliance of the order passed by Hon'ble NGT in OA No. 23/2017/EZ, O.A. no. 776/2018 and O.A. no. 373/2019 in the matter of Syed Arshad Nasar Vs Union of India with Ramchandra Chaurasia Vs State of Jharkhand with Pradeep Kumar Singh Vs State of Jharkhand before grant of mining lease.
- II. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- III. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- IV. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- V. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- VI. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VII. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

5. Brick Soil Mining for Khora Patratoli Bricks Clay Deposit of M/s Babu Bricks (Prop. : Shri Babulal Sahu), Village : Khora Patratoli, Thana : Gumla, Distt. : Gumla, Jharkhand (1.319 Ha).

(Proposal no.: SIA/JH/MIN/ 549646 /2025)

Name of the consultant : Cystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 1584 cum per year (600000 Bricks per year)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Khora Patratoli Bricks Clay Deposit
2	Lessee:	: Babu Bricks, Proprietor: Sri Babulal Sahu
3	Lessee Address	: Address: S/o Sri Munsi Sahu, at village + P.O. – Karaundi, P.S. – Gumla District – Gumla, Jharkhand
4	Lease Area	: 1.319 Ha. 3.26 Acre
5	Type of Land	: Non-Forest Raiyati Land
6	Project Cost	: Capital: Rs. 811300.00
7	EMP Budget	: Capital: Rs. 86100.00 Recurring: Rs. 326850.00
8	New or Expansion	: New
9	Mineable Reserves	: 24220 Cum
10	Mine Life	: 16 Years
11	Man power	: 36
12	Water Requirement	: 8.44 KLD
13	Water Source	: By authorised hired water tankers
14	DG Set / power	: -
15	Crusher	: No crusher
16	Nearest Water Body	: Koel River at a distance of 8 Km in Eastern direction
17	Nearest Habitation	: Khora Patratoli village at a distance of 1.0 km in North-West direction.
18	Nearest Rail Station	: Lohardaga Railway Station at a distance of 48 Km in North direction
19	Nearest Air Port	: Birsa Munda Airport, Ranchi at a distance of 87.5 Km in North-

			East direction
20	Nearest Forest	:	Divisional Forest Officer, Gumla certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
21	Road & Highways	:	NH- 43 Rourkela – Gumla – Ranchi Road at a distance of 1.4 km in North-West direction.
22	Approach Road	:	At a distance of 100 metres in North direction

CO-ORDINATES

Point No.	LATITUDE	LONGITUDE
1	23°03'28.0106" N	84°36'31.5472" E
2	23°03'27.9450" N	84°36'33.4447" E
3	23°03'27.9578" N	84°36'34.2872" E
4	23°03'27.7721" N	84°36'35.6026" E
5	23°03'27.5743" N	84°36'38.6067" E
6	23°03'27.5186" N	84°36'39.1181" E
7	23°03'26.7153" N	84°36'39.1353" E
8	23°03'25.7118" N	84°36'39.2227" E
9	23°03'25.7357" N	84°36'36.2372" E
10	23°03'25.8347" N	84°36'34.4019" E
11	23°03'25.8714" N	84°36'31.8102" E

LAND DETAILS

Khata no.	Plot no.
420	6154 & 6155

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Gumla (Sadar) vide letter no. 1036, dated 19.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO Cluster	:	DMO, Gumla vide memo no. 899/M, dated 12.08.2025 certified that 01 other mining lease area (2.00 Acre) exists within 500 meters radius from proposed project site and total area is 5.26 Acre (2.12 Ha).

4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 1035, dated 09.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Gumla Forest Division vide letter no. 2335, dated 08.12.2020 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Gumla District (Page no. 70, Sl. no. 19).
7	Gram Sabha	:	Gram Sabha conducted on 21.10.2020.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 1141/M, dated 19.12.2023.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast manual method of mining
2	Quarry Area	:	1.213 Ha. Life of Mine – 16 years
3	Waste Generation	:	No Waste Generation
4	Stripping Ratio	:	01:00
5	Working Days	:	150
6	Bench: size & No	:	NA
7	Elevation of Mine	:	616 m RL to 611 m RL
8	Ground Level Elevation	:	611 m RL
9	Ultimate Working Depth	:	609 m RL
10	Water Table	:	593m RL
11	Topography of Mine	:	Area is gently sloping land.
12	Explosive Requirement	:	NA
13	Diesel/Fuel requirement	:	NA

Production Details

Year	Surface area	Thickness	Annual Production of Soil
	(Sq. M)	Mtr.	Cum
1 st	792.00	2	1584.00
2 nd	792.00	2	1584.00

3 rd	792.00	2	1584.00
4 th	792.00	2	1584.00
5 th	792.00	2	1584.00
Toal			7920.00

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	0.398	1.213
Road	0.0	0.002	0.0
Bricks Storage	0.0	0.813	0.0
Bund	0.0	0.052	0.052
Safety Zone Plantation	0.0	0.054	0.054
Total	0.00	1.319	1.319
Unused Area	1.319	0.0	0.0
Total Lease Area	1.319		

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.054	87	1600 tree per hectare	1st Year
Road	100	200	2m X 2m spacing	1st year
Berm	0.052	84	1600 tree per hectare	End of Mine
TOTAL		371		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Toolda, Strictus & other Native Species				

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Project Cost

Budgetary Provision (in Lakhs) of Project Cost		
Particulars	Capital	Recurring
Land	0.00	103160.58

Infrastructure	100000.00	0.00
Mining Equipment Manual	100000.00	100000.00
Water Facility for Domestic Purpose "1.44" KLD (Annual Water Demand "432"KL @4L per Tanker, total number of tanker required ("108") and per tanker cost @Rs. 500)	0.00	54000.00
Statutory Clearances	500000.00	0.00
Mine Closure Cost for Plantation of "84" number of tree @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	25200.00	0.00
Environment Management Plan (EMP) Cost	86100.00	326850.00
Total	811300.00	584010.58

Environment Management Budget

Budgetary Provision (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "287" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	86100.00	14350.00
Water Facility for Horticulture "1.722" KLD & Dust Suppression "5.276" KLD (Annual Water Demand "2099.4"KL @4L per Tanker, total number of tankers required ("525") and per tanker cost @Rs. 500)	0.00	262500.00
Environment Monitoring & Compliance	0.00	50000.00
Total	86100.00	326850.00

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six

			Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Solid Waste Management

In Khora Patratoli Bricks Clay Deposit, the soil mining for bricks will be done from the top of the applied area and excavation shall be done from upper surface up to depth of 2m and all the soil shall be used in bricks casting. Thus, no waste will be generated from this activity.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water at the end of monsoon before mining is started.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Mitigation measures:

- **Movement of Trucks on Road** – Movement of Trucks on Road generate dust
For mitigation of this pollution following measures will be taken
 - ✓ Regular water sprinkling on link road by using water Tankers.
 - ✓ Regular repair of link road
 - ✓ All Trucks carrying soil outside lease area will have PUC certificate.
 - ✓ Plantation of tree on both side of link road.
- Regular water sprinkling on active Mining Area in non-monsoon season.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in brick Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
2	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *This is a low risk project.

Organizational Structure:

Introduction

The Environmental Management Cell would be established to ensure environmental sustainability and compliance to regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

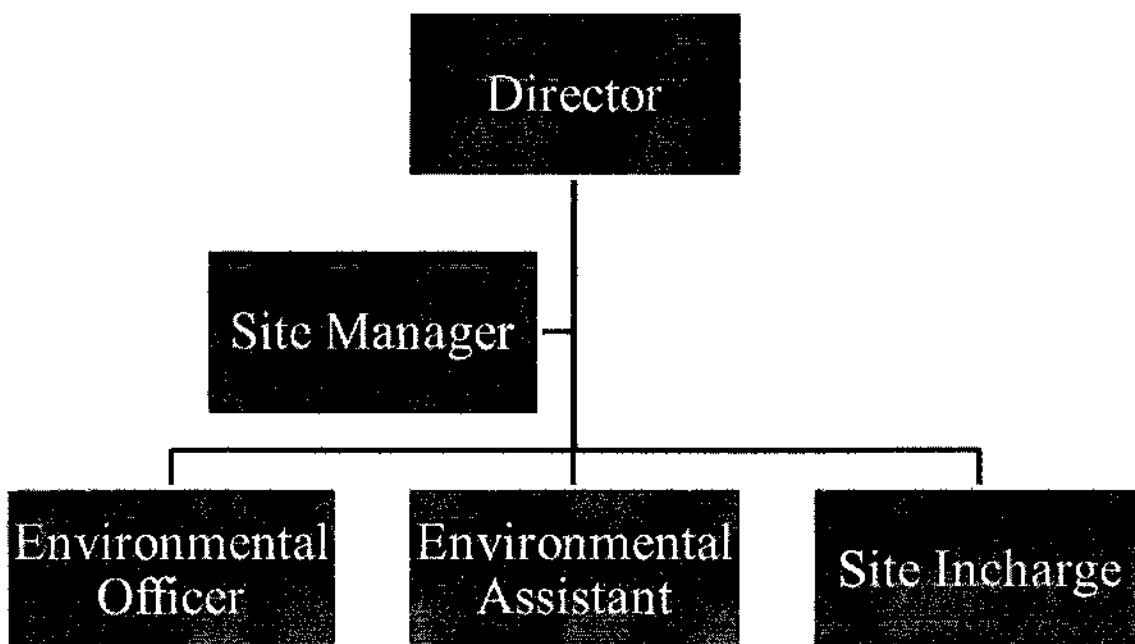
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



Roles and Responsibilities

Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility

- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Brick Soil Mining for Khora Patratoli Bricks Clay Deposit of M/s Babu Bricks (Prop. : Shri Babulal Sahu), Village : Khora Patratoli, Thana : Gumla, Distt. : Gumla, Jharkhand (1.319 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near

mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

6. **Brick Soil Mining for Chandali Bricks Clay Deposit of M/s Pappu Bricks (Partner : Shri Jai Prakash Kumar & Others), Village : Chandali, Thana : Gumla, Distt. : Gumla, Jharkhand (0.938 Ha).**

(Proposal no.: SIA/JH/MIN/ 549840 /2025)

Name of the consultant : Cyrstal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 1584 cum per year (600000 Bricks per year)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Chandali Bricks Clay Deposit

2	Lessee:	:	Pappu Bricks, Partner – Sri Jai Prakash Kumar & others
3	Lessee Address	:	Address: At village + P.O. – Karaundi, P.S. – Gumla District – Gumla, Jharkhand
4	Lease Area	:	0.938 Ha. 2.32 Acre
5	Type of Land	:	Non-Forest Raiyati Land
6	Project Cost	:	Capital: Rs. 805600.00
7	EMP Budget	:	Capital: Rs. 90000.00 Recurring : Rs. 273500.00
8	New or Expansion	:	New
9	Mineable Reserves	:	14600 Cum
10	Mine Life	:	10 Years
11	Man power	:	36
12	Water Requirement	:	6.99 KLD
13	Water Source	:	By authorised hired water tankers
14	DG Set / power	:	-
15	Crusher	:	No crusher
16	Nearest Water Body	:	Khatwa River at a distance of 0.3 Km in North direction
17	Nearest Habitation	:	Chandali Village at a distance of 1 Km in West direction.
18	Nearest Rail Station	:	Lohardaga Railway Station at a distance of 38 Km in North-East direction
19	Nearest Air Port	:	Birsa Munda Airport Ranchi at a distance 97 Km in North East direction
20	Nearest Forest	:	Divisional Forest Officer, Gumla certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
21	Road & Highways	:	NH-143A- Gumla - Ghaghra Road at a distance of 1 Km in Western direction

CO-ORDINATES

Point	Latitude	Longitude
1	23°05'05.0524" N	84°33'19.4436" E
2	23°05'04.8147" N	84°33'19.6656" E
3	23°05'04.7708" N	84°33'20.0686" E
4	23°05'03.3566" N	84°33'20.2665" E
5	23°05'03.3248" N	84°33'20.9104" E
6	23°05'03.2510" N	84°33'21.4304" E

7	23°05'03.1855" N	84°33'21.5230" E
8	23°05'03.1031" N	84°33'21.4373" E
9	23°05'03.0100" N	84°33'21.4259" E
10	23°05'02.8705" N	84°33'21.7076" E
11	23°05'02.0236" N	84°33'22.5257" E
12	23°05'01.5556" N	84°33'23.1748" E
13	23°05'01.2197" N	84°33'23.2646" E
14	23°04'59.6123" N	84°33'22.9102" E
15	23°04'59.6166" N	84°33'22.5451" E
16	23°04'59.8722" N	84°33'21.6750" E
17	23°05'01.1565" N	84°33'20.0650" E
18	23°05'01.3318" N	84°33'19.4398" E
19	23°05'01.3890" N	84°33'18.8448" E
20	23°05'01.6660" N	84°33'18.6633" E
21	23°05'02.5889" N	84°33'18.6259" E
22	23°05'02.6168" N	84°33'18.9333" E
23	23°05'02.2036" N	84°33'19.1510" E
24	23°05'01.9422" N	84°33'19.3571" E
25	23°05'01.9367" N	84°33'19.5894" E
26	23°05'02.4151" N	84°33'19.8826" E
27	23°05'02.2518" N	84°33'20.4205" E
28	23°05'02.1969" N	84°33'21.1211" E
29	23°05'02.4946" N	84°33'20.7326" E
30	23°05'03.3348" N	84°33'19.1082" E

LAND DETAILS

Khata no.	Plot no.
23	1323, 1324 & 1335

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Gumla (Sadar) vide letter no. 1001/Ra., dated 10.12.2020 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO Cluster	:	DMO, Gumla vide memo no. 821/M, dated 22.07.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 427, dated 07.07.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.

5	DFO Territorial	:	Division Forest Officer, Gumla Forest Division vide letter no. 1425 & 1426, dated 13.08.2020 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	DMO, Gumla vide memo no. 821/M, dated 22.07.2025 certified that this project is included in the potential area as identified in approved DSR of Gumla District.
7	Gram Sabha	:	Gram Sabha conducted on 04.06.2020.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 810/M, dated 17.07.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast manual method of mining
2	Quarry Area	:	0.730 Ha. Life of Mine – 10 years
3	Waste Generation	:	No Waste Generation
4	Stripping Ratio	:	01:01
5	Working Days	:	150
6	Benches: size & No	:	No Benches
7	Elevation of Mine	:	628 m RL to 633 m RL
8	Ground Level Elevation	:	628 m RL
9	Ultimate Working Depth	:	626 m RL
10	Water Table	:	610 m RL
11	Topography of Mine	:	Area is gently sloping land.
12	Explosive Requirement	:	NA
13	Diesel/Fuel requirement	:	NA

Production Details

Year	Surface area (Sq. M)	Thickness Mtr.	Annual Production of Soil Cum
1 st	792.00	2	1584.00
2 nd	792.00	2	1584.00
3 rd	792.00	2	1584.00
4 th	792.00	2	1584.00
5 th	792.00	2	1584.00
Toal			7920.00

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	0.396	0.730
Road	0.0	0.020	0.00
Kiln	0.114	0.114	0.114
Bricks Storage	0.0	0.314	0.00
Bund	0.0	0.032	0.032
Safety Zone Plantation	0.0	0.062	0.062
Total	0.114	0.938	0.938
Unused Area	0.824	0.0	0.0
Total Lease Area	0.938		

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.062	100	1600 tree per hectare	1st Year
Road	100	200	2m X 2m spacing	1st year
Bund	0.032	52	1600 tree per hectare	End of Mine
TOTAL		352		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Toolda, Strictus & other Native Species				

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Project Cost

Budgetary Provision (in Lakhs) of Project Cost		
Particulars	Capital	Recurring
Land	0.00	22979.11

Infrastructure	100000.00	0.00
Mining Equipment Manual	100000.00	100000.00
Water Facility for Domestic Purpose "1.44" KLD (Annual Water Demand "432"KL @4L per Tanker, total number of tanker required ("108") and per tanker cost @Rs. 500)	0.00	54000.00
Statutory Clearances	500000.00	0.00
Mine Closure Cost for Plantation of "52" number of tree @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	15600.00	0.00
Environment Management Plan (EMP) Cost	90000.00	273500.00
Total	805600.00	450479.11

Environment Management Budget

Budgetary Provision (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "300" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	90000.00	15000.00
Water Facility for Horticulture "1.8" KLD & Dust Suppression "3.752" KLD (Annual Water Demand "1665.6"KL @4L per Tanker, total number of tankers required ("417") and per tanker cost @Rs. 500)	0.00	208500.00
Environment Monitoring & Compliance	0.00	50000.00
Total	90000.00	273500.00

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water	Six Monthly

		2 Ground water	
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Solid Waste Management

As the soil mining for bricks casting will be done from the top of the applied area and excavation shall be done from upper surface up to depth of 2m and all the soil shall be used in bricks casting. Thus, no waste will be generated from this activity.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water at the end of monsoon before mining is started.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Mitigation measures:

- **Movement of Trucks on Road** – Movement of Trucks on Road generate dust
For mitigation of this pollution following measures will be taken
 - ✓ Regular water sprinkling on link road by using water Tankers.
 - ✓ Regular repair of link road
 - ✓ All Trucks carrying soil outside lease area will have PUC certificate.
 - ✓ Plantation of tree on both side of link road.
- Regular water sprinkling on active Mining Area in non-monsoon season.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in brick Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
2	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *This is a low risk project.

Organizational Structure:

Introduction

The Environmental Management Cell would be established to ensure environmental sustainability and compliance to regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

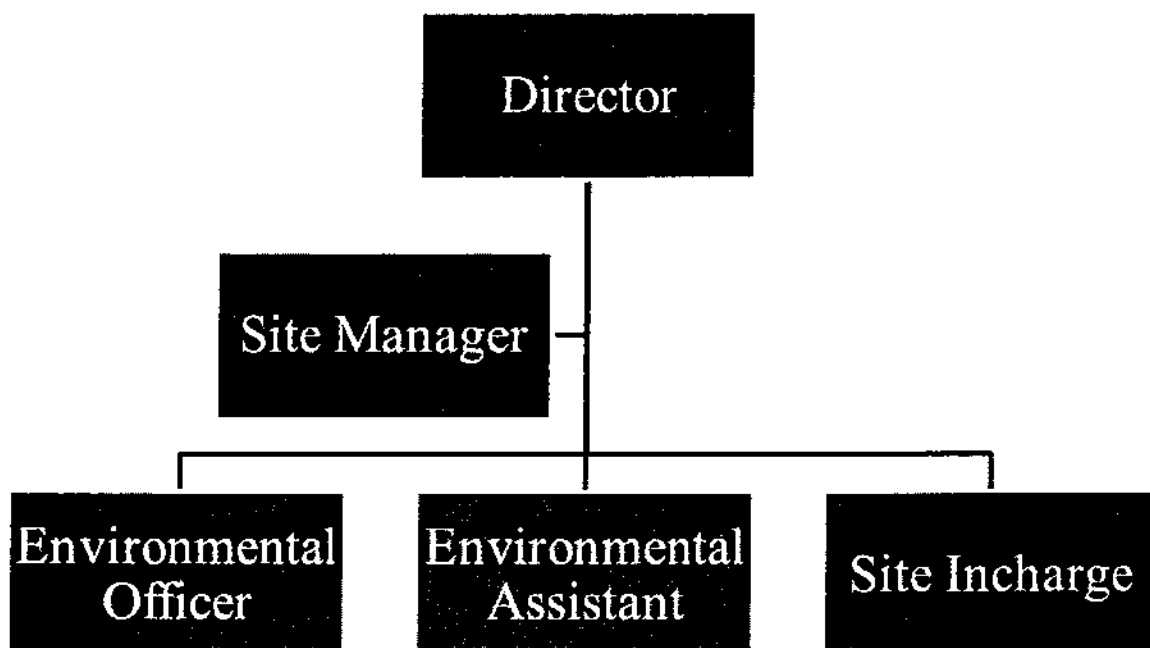
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility

- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

Handwritten signatures and initials are present at the bottom of the page, including a large signature on the left, the letter 'A' in the center, and several other scribbles and initials on the right.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Brick Soil Mining for Chandali Bricks Clay Deposit of M/s Pappu Bricks (Partner : Shri Jai Prakash Kumar & Others), Village : Chandali, Thana : Gumla, Distt. : Gumla, Jharkhand (0.938 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety

- zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
 - V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
 - VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
 - VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
 - VIII. Failing of any of terms & conditions mentioned In EC can lead to revocation / cancellation of EC.

7. Piska Stone Deposit of M/s Chhotanagpur Stone Works (Prop. : Shri Rambahadur Singh), Village : Piska, Anchal : Ormanjhi, Distt. : Ranchi, Jharkhand (0.947 Ha).

(Proposal no.: SIA/JH/MIN/ 535452 /2025)

Name of the consultant : Cyrstal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 32253 Cum per year or 87082 Tonnes per year
Project and Location Details:

Si.No.	Parameter	Details
1	Project Name	: Piska Stone Deposit
2	Lessee:	: M/s Chhotanagpur Stone Works Proprietor-Sri Rambahadur Singh
3	Lessee Address	: S/o Sri Krishna Singh, Sunaina Bhawan, Harihar Singh Road, Manda Bagicha, Morabadi, Dist.-Ranchi, Jharkhand.
4	Lease Area	: 0.947 Ha. 2.34 Acre

5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital: Rs. 3027700.00	
7	EMP Budget	:	Capital : Rs. 1525200.00	Recurring : Rs. 696220.00 per Year
8	New or Expansion	:	New	
9	Mineable Reserves	:	406668 Tonnes	150618 Cum
10	Mine Life	:	5 Years	
11	Man power	:	15	
12	Water Requirement	:	13.00 KLD	
13	Water Source	:	By authorised hired water tankers	
14	DG Set / power	:	-	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Subarnarekha river at a distance of 8.38 km in South direction	
17	Nearest Habitation	:	Minor Habitation within 500m as per KML. The Project Proponent has submitted compliance to Office Memorandum No. Z-11013/57/2014-IA.II (M) dated 29/10/2014, issued by the Ministry of Environment, Forests and Climate Change (MoEF&CC), stating that the mining activities will have no adverse impact on the nearest habitation.	
18	Nearest Rail Station	:	Daridag Railway Station at a distance of 5.95 Km in North-West direction.	
19	Nearest Air Port	:	Ranchi Airport at a distance of 37.5 Km in South-West direction	
20	Nearest Forest	:	Divisional Forest Officer, Ranchi certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.	
21	Road & Highways	:	NH-20, Ranchi-Ramgarh Road at about 0.38 Km in Eastern direction	
22	Approach road	:	At a distance of 582 meters in Eastern direction	

CO-ORDINATES

PILLAR ID	LATITUDE	LONGITUDE	PILLAR ID	LATITUDE	LONGITUDE
P1	23°32' 21.7871"N	85°29' 34.8637"E	P7	23°32' 19.3978"N	85°29' 38.4327"E

P2	23°32' 21.5964"N	85°29' 35.8044"E	P8	23°32' 18.2745"N	85°29' 37.8945"E
P3	23°32' 21.3304"N	85°29' 36.4903"E	P9	23°32' 17.735"N	85°29' 37.2486"E
P4	23°32' 20.9752"N	85°29' 37.0624"E	P10	23°32' 18.4668"N	85°29' 35.5933"E
P5	23°32' 20.5564"N	85°29' 37.1508"E	P11	23°32' 19.3407"N	85°29' 33.9488"E
P6	23°32' 19.9904"N	85°29' 37.6478"E	P12	23°32' 20.7044"N	85°29' 34.3255"E

LAND DETAILS

Khata no.	Plot no.
11	175, 176 & 177

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Ranchi vide letter no. 195/M, dated 06.02.2025.
2	CO	:	The CO, Ormanjhi (Ranchi) vide letter no. 753 (ii), dated 25.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Ranchi vide memo no. 397/M, dated 21.03.2025 certified that 02 other mining lease area (2.60 Acre & 1.60 Acre) and 01 LoI (1.22 Acre) exists within 500 meters radius from proposed project site and total area is 7.76 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 787, dated 20.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Ranchi Forest Division vide letter no. 3139, dated 26.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	DMO, Gumla vide memo no. 1008/M, dated 07.08.2025 certified that this project is included in the potential area as identified in approved DSR of Ranchi District.

7	Gram Sabha	:	BDO, Ormanjhi (Ranchi) vide letter no. 1187(ii), dated 07.10.2024 informed that Gram Sabha conducted on 05.10.2024.
8	Mine Plan Approval	:	Approved by DMO, Ranchi vide Memo No. 380/M, dated 17.03.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized "OTFM" Method
2	Quarry Area	:	0.778 Ha. Life of Mine – 5 years
3	Waste Generation	:	12265 cum
4	Stripping Ratio	:	1:0.08
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m and 6 in numbers
7	Elevation of Mine	:	685 m AMSL to 675 m AMSL
8	Ground Level Elevation	:	675 m AMSL
9	Ultimate Working Depth	:	640 m AMSL
10	Water Table	:	629 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	36 kg/day (To be handle by licensed external Agency)
13	Diesel/Fuel requirement	:	174 litre/day

Production Details

Year	Production of Stone in cum	Production of Stone in Tonnes	Overburden in Cum	Intercalated waste in Cum	Total Waste in Cum
1 st Year	27973	75526	1300	1472	2772
2 nd Year	29393	79361	0	1547	1547
3 rd Year	30628	82696	0	1450	1450
4 th Year	30372	82003	1750	1599	3349
5 th Year	32253	87082	1450	1698	3148
Total	150618	406668	4500	7765	12265

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan Period (Ha)	At Conceptual period (Ha)
Excavation	0.514	0.778	0.778 (0.147 Ha area shall be

			Backfilled, 0.597 Ha converted in to water reservoir & 0.034 Ha shall be left as dead benches).
Waste Dump	0.00	Nil (comes under quarry).	Nil (comes under quarry).
Road	0.066	0.00	0.00
Infrastructure (Crusher)	0.00	0.00	0.00
Safety Zone Plantation	0.00	0.169	0.169
Total	0.580	0.947	0.947
Unused Area	0.367	0.00	0.00
Total Lease Area	0.947		

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.169	271	1600 tree per hectare	1st Year
Approach Road	582	1164	2m X 2m spacing	1st year
Dead Bench	0.034	55	1600 tree per hectare	End of Mine
Backfilled area (level upto surface)	0.147	236	1600 tree per hectare	End of Mine
TOTAL		1726		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Toolda, Strictus & other Native Species				

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Project Cost

Budgetary Provision (in Lakhs) of Project Cost				
Particulars			Capital	Recurring
Land			0.00	99706.87
Infrastructure			700000.00	0.00
Mining Equipment			0.00	7800000.00
Equipment	Quantity	Rent per year		

Loader	1	600000		
Dumper	2	2000000		
Compressor	1	1000000		
Water Sprinkler	1	600000		
Rock Breaker	1	800000		
Excavator	1	800000		
Water Facility for Domestic Purpose "0.64" KLD (Annual Water Demand "192"KL @4KL per Tanker, total number of tanker required ("48") and per tanker cost @Rs. 500)		0.00		24000.00
Statutory Clearances		500000.00		0.00
Mine Closure Cost for Plantation of "675" number of tree @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance		202500.00		0.00
Mine Closure Cost for fencing around mine		100000.00		0.00
Environment Management Plan (EMP) Cost		1525200.00		696220.00
Total		3027700.00		8619926.87

Environment Management Budget

Budgetary Provision (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "1435" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	430500.00	71750.00
Water Facility for Horticulture "8.61" KLD & Dust Suppression "3.788" KLD (Annual Water Demand "3719.4"KL @4L per Tanker, total number of tankers required ("930") and per tanker cost @Rs. 500)	0.00	465000.00
Garland Drain & Desiltation Pond	94700.00	9470.00
Environment Monitoring & Compliance	0.00	50000.00
To prevent the impact of mining activities on these habitations under compliance of OM Z-11013/57/2014-IA.II (M) dated 29/10/2014 issued by MoEF & CC	1000000.00	100000.00
Total	1525200.00	696220.00

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly

2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Solid Waste Management

In this applied lease area, the stone deposit is covered with 1m layer of intermixed soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 12265 cum in-situ, 15330.94 cum loose & 13031.30 cum compact waste shall be generated during this plan period. During first and second year of plan period 4319 cum (in situ) waste shall be used for backfilling in north western part of old quarry in excavated part of safety zone area which will cover 0.10 Ha. The waste generated during third & fourth year (4798 cum) will be temporary dumped in eastern part with the height of 8.47m and waste generated during fifth year (3148 cum) as well as waste materials of temporary dump shall be removed and used for backfilling of exhausted part of quarry in western part and it will cover 0.047 Ha.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench

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- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an

interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

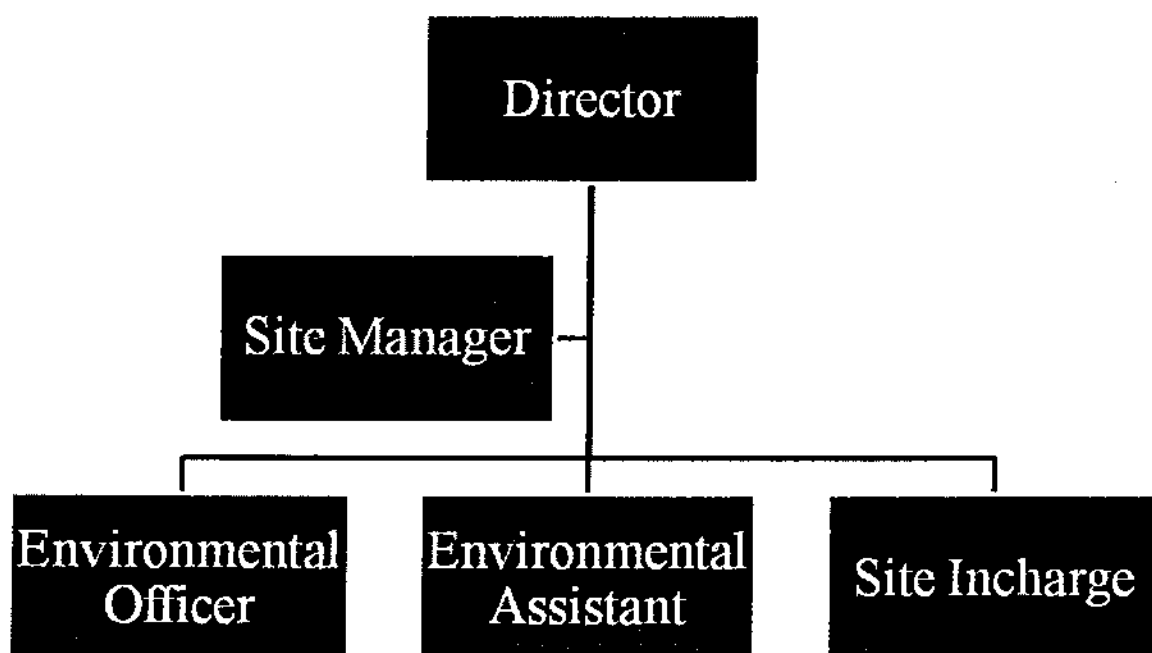
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training

- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Piska Stone Deposit of M/s Chhotanagpur Stone Works (Prop. : Shri Rambahadur Singh), Village : Piska, Anchal : Ormanjhi, Distt. : Ranchi, Jharkhand (0.947 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the

area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

8. Chatrogoga Stone Mine of M/s Swastik Stone Crusher (Partners : Shri Ajay Choudhari & Shri Sunil Kumar Nagpal), Village : Chatrogoga, Thana : Mandro, Distt. : Sahibganj, Jharkhand (2.83 Ha).

(Proposal no.: SIA/JH/MIN/ 549919 /2025)

Name of the consultant : Cyrstal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 100800 cum per year or 282240 Tonnes per year

Project and Location Details:

Si. No.	Parameter	Details
1	Project Name	: Chatrogoga Stone Mine

2	Lessee:	:	M/s Swastik Stone Crusher, Partner: Sri Ajay Choudhary & Sri Sunil Kumar Nagpal
3	Lessee Address	:	S/o Late Rajendra Kumar Choudhary, R/o Sooran Bhawan, Modi Road, Near Gadla Nagar Hall, P.S. + Dist. – Jhunjhunu (Rajasthan)
4	Lease Area	:	2.83 Ha 7.0 Acre
5	Type of Land	:	Non-Forest Raiyati Land
6	Project Cost	:	Capital: Rs. 2357000.00
7	EMP Budget	:	Capital : Rs. 810700.00 Recurring : Rs. 986250.00 per Year
8	New or Expansion	:	New
9	Mineable Reserves	:	968400 cum 2711520 Tonnes
10	Mine Life	:	10 Years
11	Man power	:	36
12	Water Requirement	:	23.30 KLD
13	Water Source	:	By authorised hired water tankers
14	DG Set / power	:	-
15	Crusher	:	No crusher
16	Nearest Water Body	:	Ganga River at a distance of 6.5 km in North-East direction.
17	Nearest Habitation	:	Chatrogoga Village at a distance of 1.3 Km in North direction
18	Nearest Rail Station	:	Sahibganj Railway Station is at a distance of 4.00 km in North-East direction.
19	Nearest Air Port	:	Deoghar Airport is at a distance of 145 km South-West direction.
20	Nearest Forest	:	Nearest forest is 254 m away as per Divisional Forest Officer, Sahibganj reserved / protected forest is more than 250 meters from proposed project site.
21	Road & Highways	:	NH – 33 at a distance of 2.9 km in North-East direction.
22	Approach Road	:	The distance of Approach Road is 473m, after that this road connects to village road.

CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
P1	25° 13' 16.20506642" N	87° 36' 01.03754083" E

P2	25° 13' 16.71927945" N	87° 36' 00.34971795" E
P3	25° 13' 17.95481859" N	87° 36' 00.61813494" E
P4	25° 13' 19.18067701" N	87° 36' 00.89951647" E
P5	25° 13' 20.32012928" N	87° 36' 01.10043866" E
P6	25° 13' 21.69530046" N	87° 36' 01.41554866" E
P7	25° 13' 21.01149740" N	87° 36' 02.73863488" E
P8	25° 13' 20.28916104" N	87° 36' 04.04695693" E
P9	25° 13' 19.52002475" N	87° 36' 05.42191934" E
P10	25° 13' 18.88144083" N	87° 36' 06.44556686" E
P11	25° 13' 17.48088673" N	87° 36' 06.45247976" E
P12	25° 13' 15.81813355" N	87° 36' 06.40276636" E
P13	25° 13' 14.20439678" N	87° 36' 06.35523231" E
P14	25° 13' 12.87043516" N	87° 36' 06.29011572" E
P15	25° 13' 13.28014275" N	87° 36' 05.63668338" E
P16	25° 13' 13.90748512" N	87° 36' 04.60645701" E
P17	25° 13' 14.63226883" N	87° 36' 03.42165595" E
P18	25° 13' 15.50135288" N	87° 36' 02.07376790" E

LAND DETAILS

Khata no.	Plot no.
15	55 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Sahibganj vide letter no. 1541/M, dated 22.08.2025.
2	CO	:	The CO, Mandro vide memo no. 391/Ra., dated 03.07.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 1506/M, dated 20.08.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2171, dated 26.07.2025 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2170, dated 26.07.2025 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.

6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 1542/M, dated 22.08.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 198).
7	Gram Sabha	:	Gram Sabha conducted on 23.06.2025.
8	Mine Plan Approval	:	Mine plan approved by DMO, Sahibganj vide memo no. 1582/M, dated 30.08.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 1505/M, dated 20.08.2025 certified that said project falls under grid no. 14 and production is within the over all permissible production limit. The DMO also stated that this certificate is issued in the light of order passed by Hon'ble NGT on 22.12.2021 in OA No. 23/2017/EZ, O.A. no. 776/2018 and O.A. no. 373/2019. It also states this certificate is issued in compliance of report of Expert Committee.
10	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mining plan has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized "OTFM" Method
2	Quarry Area	:	2.145 Ha. Life of Mine – 10 years
3	Waste Generation	:	33000 cum
4	Stripping Ratio	:	1:0.03
5	Working Days	:	300
6	Benches: size & No	:	6m to 6m and 10 in numbers
7	Elevation of Mine	:	255 m AMSL to 240 m AMSL
8	Ground Level Elevation	:	240 m AMSL
9	Ultimate Working Depth	:	185 m AMSL
10	Water Table	:	177 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	94 kg/day (To be handle by licensed external Agency)
13	Diesel/Fuel requirement	:	564 litre/day

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Tonnes
1 st	99800	2.8	279440	333	931	14000	47
2 nd	95600	2.8	267680	319	892	5000	17

3 rd	98800	2.8	276640	329	922	14000	47
4 th	96000	2.8	268800	320	896	0	0
5 th	100800	2.8	282240	336	941	0	0
Total	491000		1374800	336 (Max)	941 (Max)	33000	47 (Max)

Land Use

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	At the end of plan period	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.
1	Mining Activities	0	2.145	1.632	Water body
2	Dead Benches	0	0	0.513	Plantation
3	Dumping	0	0.141	0.141	Plantation
4	Garland drain	0	0.032	0.032	Plantation
5	Settling Tank	0	0.004	0.004	-
6	Safety Zone	0	0.508	0.508	Plantation
7	Unutilized	2.830	0	0	-
Total		2.830	2.830	2.830	-

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.508	813	1600 tree per hectare	1st Year
Approach Road	473	946	2m X 2m spacing	1st year
Dead Bench	0.513	821	1600 tree per hectare	End of Mine
Backfilled area (level upto surface)	0.000	0	1600 tree per hectare	End of Mine
Total		2580		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Toolda, Strictus & other Native Species				

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

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Project Cost

Budgetary Provision (in Lakhs) of Project Cost				
Particulars			Capital	Recurring
Land			0.00	69930.72
Infrastructure			700000.00	0.00
Mining Equipment			0.00	26400000.00
Equipment	Quantity	Rent per year		
Dumper	10	2000000		
Wagon Drill	3	1000000		
Compressor	1	1000000		
Water Sprinkler	1	600000		
Portable Pump	2	100000		
JCB	1	800000		
Excavator	1	800000		
Water Facility for Domestic Purpose "1.44" KLD (Annual Water Demand "432"KL @4L per Tanker, total number of tanker required ("108") and per tanker cost @Rs. 500)			0.00	54000.00
Statutory Clearances			500000.00	0.00
Mine Closure Cost for Plantation of "821" number of tree @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance			246300.00	0.00
Mine Closure Cost for fencing around mine			100000.00	0.00
Environment Management Plan (EMP) Cost			810700.00	986250.00
Total			2357000.00	27510180.72

Environment Management Budget

Budgetary Provision (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "1759" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	527700.00	87950.00
Water Facility for Horticulture "10.55" KLD & Dust Suppression "11.32" KLD (Annual Water Demand "6561"KL @4L per Tanker, total number of tankers required ("1640") and per tanker cost @Rs. 500)	0.00	820000.00
Garland Drain & Desiltation Pond	283000.00	28300.00
Environment Monitoring & Compliance	0.00	50000.00
Total	810700.00	986250.00

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Solid Waste Management

An Overburden (O.B.) dump area of 0.141 Ha has been earmarked in the south-eastern corner of the leasehold to accommodate about 33,000 cubic meters of O.B. during the working plan period. The topsoil component within the O.B. will be selectively preserved and utilized for plantation activities, while the remaining material will be systematically deposited in the designated dump area. A portion of the O.B. will also be gainfully utilized for the maintenance of haul roads and approach roads, ensuring operational efficiency. At the end of the mine's life, the O.B. will be backfilled into the exhausted quarry, and the dump area will be reclaimed and developed into a green belt, thereby restoring the ecological balance and supporting sustainable post-mining land use.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

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Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.

- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.

- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective

equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

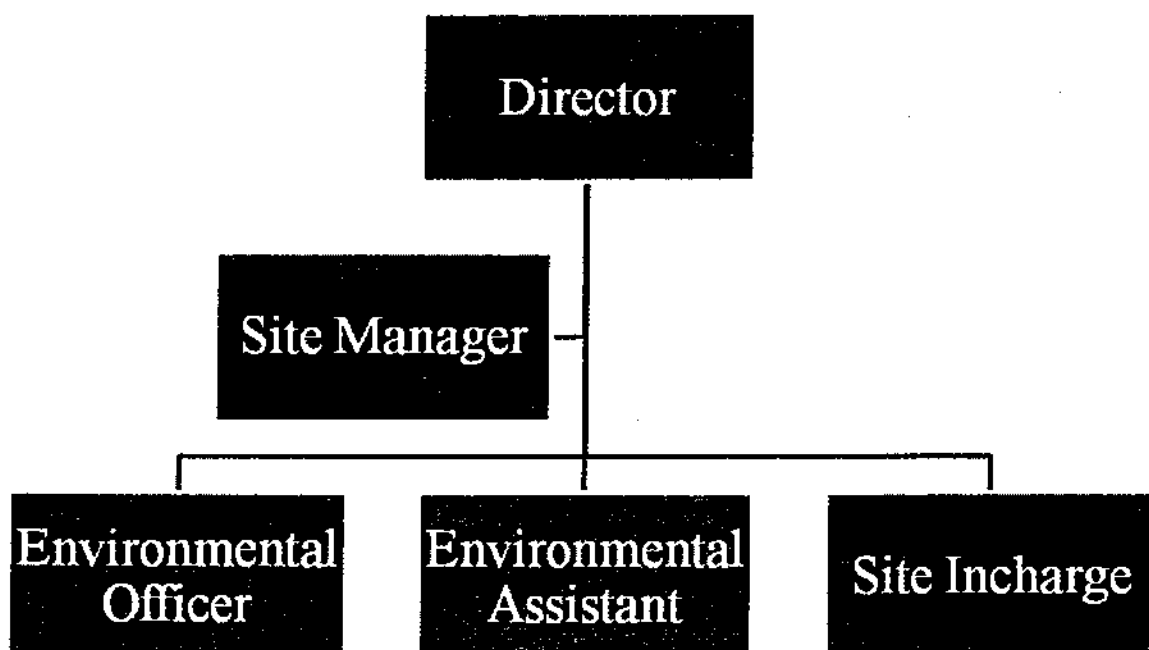
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



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EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training

- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

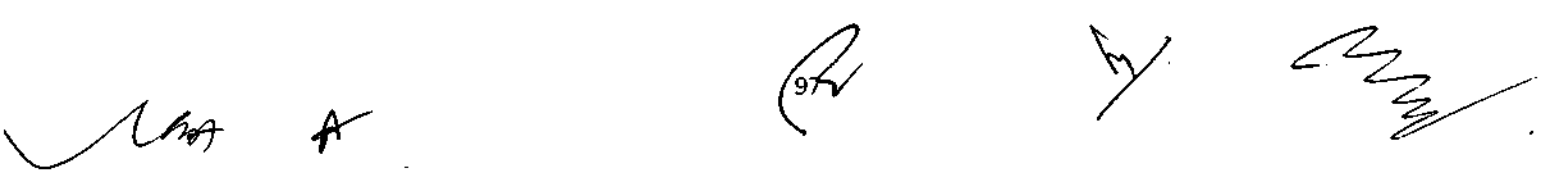
- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.



- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chatrogoga Stone Mine of M/s Swastik Stone Crusher (Partners : Shri Ajay Choudhari & Shri Sunil Kumar Nagpal), Village : Chatrogoga, Thana : Mandro, Distt. : Sahibganj, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. That the Deputy Commissioner, Sahibganj will ensure compliance of the order passed by Hon'ble NGT in OA No. 23/2017/EZ, O.A. no. 776/2018 and O.A. no. 373/2019 in the matter of Syed Arshad Nasar Vs Union of India with Ramchandra Chaurasia Vs State of Jharkhand with Pradeep Kumar Singh Vs State of Jharkhand before grant of mining lease.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.

- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

9. Kalhajor Stone Deposit of M/s Shiv Stone (Partners : Shri Vikash Kumar Mandal & Shri Kirtan Mandal), Village : Kalhajor, Tehsil : Madhupur, Distt. : Deoghar, Jharkhand (1.445 Ha).

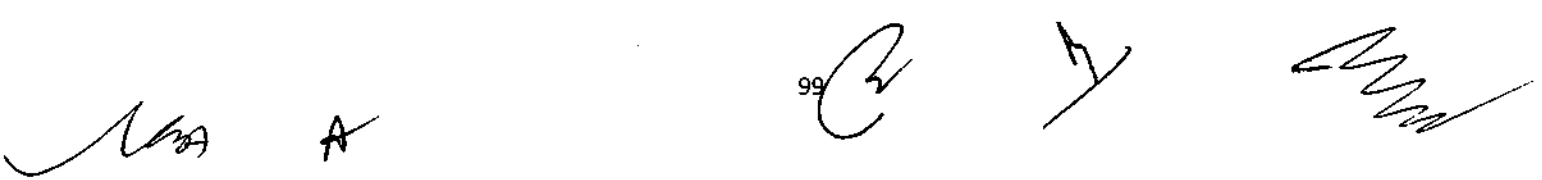
(Proposal no.: SIA/JH/MIN/ 550370 /2025)

Name of the consultant : Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

The bottom of the page features several handwritten signatures and initials. From left to right, there is a signature that appears to be 'M', a single letter 'A', a signature with the number '99' written below it, a stylized signature, and a long, flowing signature on the far right.

EC Application for: Proposed Capacity – 98701 Tonnes or 36556 Cum per year**Project and Location Details:**

Sl	Parameter	Details
1	Project Name	: Kalhajor Stone Deposit
2	Lessee:	: M/s Shiv Stone, Partners – (i)Sri Vikash Kumar Mandal & (ii) Sri Kirtan Mandal
3	Lessee Address	: At- Bhandro, P.O + P.S - Margomunda, Deoghar, Jharkhand
4	Lease Area	: 1.445 Ha. 3.57 Acre
5	Type of Land	: Non-Forest Raiyati Land
6	Project Cost	: Capital: Rs. 3085000.00
7	EMP Budget	: Capital: Rs. 1570200.00 Recurring: Rs. 771900.00 per year
8	New or Expansion	: New
9	Mineable Reserves	: 466779 Tonnes 172881 Cum
10	Mine Life	: 5 Years
11	Man power	: 15
12	Water Requirement	: 20.29 KLD
13	Water Source	: By authorised hired water tankers
14	DG Set / power	: -
15	Crusher	: No crusher
16	Nearest Water Body	: Jainti river at a distance of 4km from lease area on southern side
17	Nearest Habitation	: Minor Habitation within 500m as per KML. The Project Proponent has submitted compliance to Office Memorandum No. Z-11013/57/2014-IA.II (M) dated 29/10/2014, issued by the Ministry of Environment, Forests and Climate Change (MoEF&CC), stating that the mining activities will have no adverse impact on the nearest habitation.
18	Nearest Rail Station	: Sugapahari Railway Station at a distance of 3.5 Km in North direction
19	Nearest Air Port	: Deoghar Airport at a distance of 41 Km in North-East direction
20	Nearest Forest	: Divisional Forest Officer, Deoghar certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
21	Road & Highways	: NH 114A- Giridih- Madhupur Road at about 8km in North direction
22	Approach Road	: At a distance of 330 meters in South-East direction

CO-ORDINATES

PILLAR ID	LATITUDE	LONGITUDE
P1	24°14'46.23220" N	86°34'55.81207" E
P2	24°14'46.41713" N	86°34'55.80206" E
P3	24°14'47.03266" N	86°34'56.00874" E
P4	24°14'47.03964" N	86°34'56.66174" E
P5	24°14'47.55145" N	86°34'56.96407" E
P6	24°14'47.09022" N	86°34'58.17590" E
P7	24°14'47.84885" N	86°34'58.38100" E
P8	24°14'47.74294" N	86°34'58.66655" E
P9	24°14'47.96322" N	86°34'58.67710" E
P10	24°14'47.87160" N	86°34'59.15402" E
P11	24°14'47.98212" N	86°34'59.30004" E
P12	24°14'48.06143" N	86°34'59.36358" E
P13	24°14'47.97946" N	86°34'59.57778" E
P14	24°14'47.92787" N	86°34'59.76329" E
P15	24°14'47.16146" N	86°34'59.80519" E
P16	24°14'47.03345" N	86°35'00.36103" E
P17	24°14'47.01030" N	86°35'00.70638" E
P18	24°14'47.15149" N	86°35'00.74720" E
P19	24°14'47.11769" N	86°35'00.97249" E
P20	24°14'47.16272" N	86°35'01.07369" E
P21	24°14'47.64588" N	86°35'01.33559" E
P22	24°14'48.05466" N	86°35'01.58194" E
P23	24°14'48.27152" N	86°35'01.60375" E
P24	24°14'48.38017" N	86°35'01.69912" E
P25	24°14'48.37193" N	86°35'01.85521" E
P26	24°14'48.33578" N	86°35'02.01250" E
P27	24°14'47.70348" N	86°35'02.00987" E
P28	24°14'47.06333" N	86°35'01.78498" E
P29	24°14'46.52927" N	86°35'01.54748" E
P30	24°14'45.88746" N	86°35'01.21646" E
P31	24°14'45.78349" N	86°35'00.94474" E
P32	24°14'45.25343" N	86°35'01.08805" E
P33	24°14'44.40368" N	86°35'01.25758" E
P34	24°14'44.32358" N	86°35'01.20941" E
P35	24°14'44.19848" N	86°35'01.06548" E
P36	24°14'43.85483" N	86°35'01.07801" E
P37	24°14'43.66774" N	86°35'00.63449" E
P38	24°14'43.58936" N	86°35'00.28572" E
P39	24°14'43.64045" N	86°34'59.77888" E
P40	24°14'43.74341" N	86°34'59.67721" E
P41	24°14'43.59412" N	86°34'59.65039" E
P42	24°14'43.43654" N	86°34'59.60305" E
P43	24°14'43.31504" N	86°34'59.53026" E
P44	24°14'43.16766" N	86°34'59.42377" E

P45	24°14'43.11776" N	86°34'59.11432" E
P46	24°14'43.17641" N	86°34'58.81350" E
P47	24°14'43.51117" N	86°34'58.42751" E
P48	24°14'43.80090" N	86°34'58.21075" E
P49	24°14'44.29475" N	86°34'58.03108" E
P50	24°14'44.89015" N	86°34'57.90248" E
P51	24°14'45.24446" N	86°34'57.75449" E
P52	24°14'45.58448" N	86°34'57.38308" E
P53	24°14'46.02703" N	86°34'56.73940" E
P54	24°14'46.14104" N	86°34'56.46130" E

LAND DETAILS

Khata no.	Plot no.
12	555, 561, 562, 563, 564 & 565
04	548 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Deoghar vide letter no. 139/M, dated 10.02.2024.
2	CO	:	The CO, Madhupur vide letter no. 456/Ra., dated 08.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Deoghar vide memo no. 419/M, dated 12.04.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1157, dated 14.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Deoghar Forest Division vide letter no. 1028, dated 13.06.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Deoghar District (Page no. 62, Sl. no. 08).

7	Gram Sabha	:	BDO, Madhupur vide letter no. 1409/Vi. Dated 10.06.2023 informed that Gram Sabha conducted on 03.06.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Deoghar vide Memo No. 96, dated 19.06.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized "OTFM" Method
2	Quarry Area	:	0.971 Ha. Life of Mine – 5 years
3	Waste Generation	:	34929 cum
4	Stripping Ratio	:	1:0.02
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m and 5 in numbers
7	Elevation of Mine	:	250m AMSL to 238 m AMSL
8	Ground Level Elevation	:	238 m AMSL
9	Ultimate Working Depth	:	220 m AMSL
10	Water Table	:	210 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	41 kg/day (To be handle by licensed external Agency)
13	Diesel/Fuel requirement	:	197 litre/day

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in Cum	Intercalated in Cum	Total Waste in Cum
1 st Year	33274	89839	10950	1751	12701
2 nd Year	34552	93289	4640	1819	6459
3 rd Year	34656	93571	4080	1824	5904
4 th Year	36556	98701	6160	1924	8084
5 th Year	33844	91378	0	1781	1781
Total	172881	466779	25830	9099	34929

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	0.971	0.971 (0.131 Ha area shall be Backfilled, 0.524 Ha

			converted in to water reservoir & 0.316 Ha shall be left as dead benches)
Waste Dump	0.0	Nil (comes under quarry)	Nil (comes under quarry)
Road	0.00	0.00	0.00
Infrastructure	0.00	0.00	0.00
Safety Zone Plantation	0.0	0.474	0.474
Total	0.0	1.445	1.445
Unused Area	1.445	0.0	0.0
Total Lease Area	1.445		

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.474	759	1600 tree per hectare	1st Year
Approach Road	330	660	2m X 2m spacing	1st year
Dead Bench	0.316	506	1600 tree per hectare	End of Mine
Backfilled area (level upto surface)	0.131	210	1600 tree per hectare	End of Mine
TOTAL		2135		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Toolda, Strictus & other Native Species				

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Project Cost

BUDGETARY PROVISION (IN LAKHS) OF PROJECT COST				
Particulars			Capital	Recurring
Land			0.00	89266.68
Infrastructure			700000.00	0.00
Mining Equipment			0.00	7800000.00
Equipment	Quantity	Rent per year		
Loader	1	600000		

Dumper	2	2000000		
Compressor	1	1000000		
Water Sprinkler	1	600000		
Rock Breaker	1	800000		
Excavator	1	800000		
Water Facility for Domestic Purpose "0.6" KLD (Annual Water Demand "180"KL @4L per Tanker, total number of tanker required ("45") and per tanker cost @Rs. 500)			0.00	22500.00
Statutory Clearances			500000.00	0.00
Mine Closure Cost for Plantation of "716" number of tree @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance			214800.00	35,800.00
Mine Closure Cost for fencing around mine			100000.00	0.00
Environment Management Plan (EMP) Cost			1570200.00	771900.00
Total			3085000.00	8719466.68

Environment Management Budget

Budgetary Provision (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "1419" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	425700.00	70950.00
Water Facility for Horticulture "8.514" KLD & Dust Suppression "5.78" KLD (Annual Water Demand "4288.2"KL @4L per Tanker, total number of tankers required ("1073") and per tanker cost @Rs. 500)	0.00	536500.00
Garland Drain & Desiltation Pond	144500.00	14450.00
Environment Monitoring & Compliance	0.00	50000.00
To prevent the impact of mining activities on these habitations under compliance of OM Z-11013/57/2014-IA.II (M) dated 29/10/2014 issued by MoEF & CC	1000000.00	100000.00
Total	1570200.00	771900.00

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project	3 Stations	Six Monthly

	site only.		
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Solid Waste Management

In this applied lease area, the stone deposit is covered with 2m layer of intermixed soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 34929 cum in-situ 43661 cum loose & 37112 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 18556 cum (compact) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 18556 cum waste shall be temporary dumped in southern part of the area, dumping shall be done up to first and second year, third year onwards the generated waste and waste materials of past dumping shall be removed and used for backfilling in exhausted part of quarry in north western part of the area and it will cover 0.131ha area.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate.

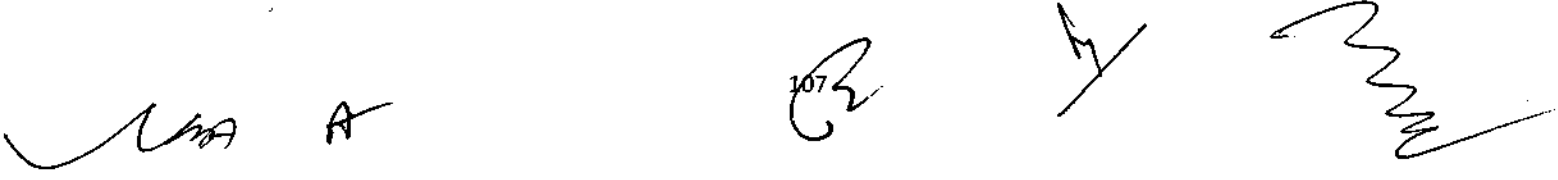
RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.



The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench

- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective

equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.

- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

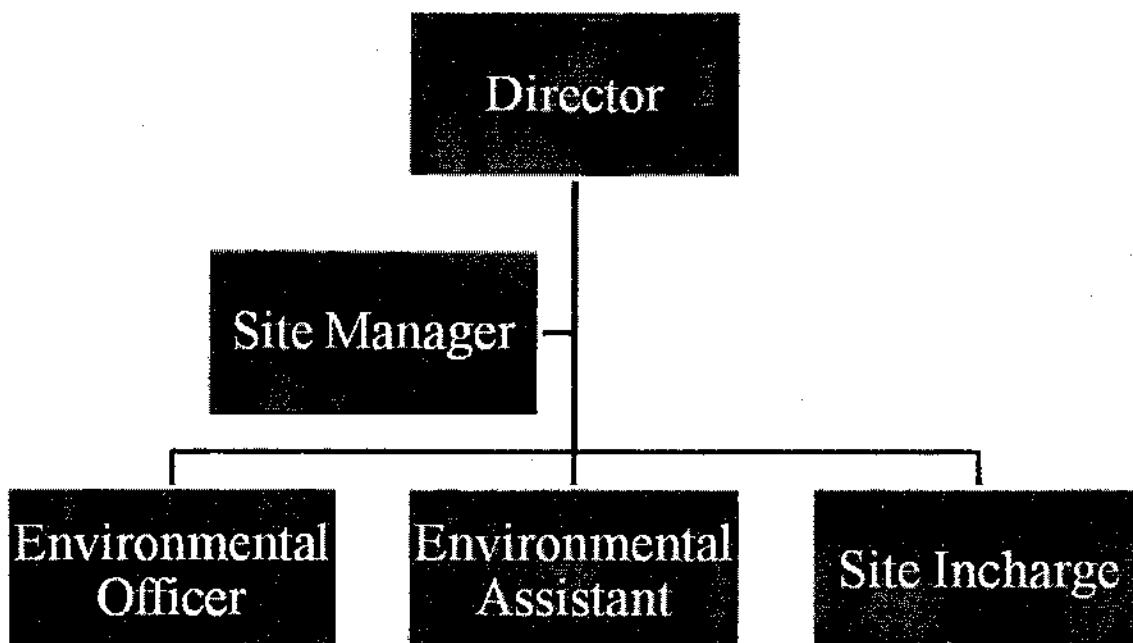
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training

- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kalhajor Stone Deposit of M/s Shiv Stone (Partners : Shri Vikash Kumar Mandal & Shri Kirtan Mandal), Village : Kalhajor, Tehsil : Madhupur, Distt. : Deoghar, Jharkhand (1.445 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

10. Domangolgo Stone Deposit of M/s Anaya Enterprises (Prop. : Shri Rakesh Sen Gupta), Village : Domangolgo, Anchal : Bagodar, Distt. : Giridih, Jharkhand (2.809 Ha).

(Proposal no.: SIA/JH/MIN/ 550360 /2025)

Name of the consultant : Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 80522 Cum per Year or 217409 Tonnes per Year.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Domangolgo Stone Deposit

2	Lessee:	:	M/s Anaya Enterprises, Proprietor – Sri Rakesh Sen Gupta
3	Lessee Address	:	At – Bye Pass Road Rajpura, Nawada Basti, P.O. – Jhumritilaiya, P.S. – Tilaiya, Kodarma Jharkhand
4	Lease Area	:	2.809 Ha 6.94 Acre
5	Type of Land	:	Non-Forest Raiyati Land
6	Project Cost	:	Capital: Rs. 3406200.00
7	EMP Budget	:	Capital: Rs. 1742900.00 Recurring: Rs. 1023090.00 per year
8	New or Expansion	:	New
9	Mineable Reserves	:	768664 cum 2075393 Tonnes
10	Mine Life	:	10 Years
11	Man power	:	23
12	Water Requirement	:	21.40 KLD
13	Water Source	:	By authorised hired water tankers
14	DG Set / power	:	-
15	Crusher	:	No crusher
16	Nearest Water Body	:	Jamuniya river at a distance of 8 km in South-West direction
17	Nearest Habitation	:	Domangolgo Village at a distance of 0.74 Km in South-West direction.
18	Nearest Rail Station	:	Karmabad railway station at a distance of 5 Km in South-West direction.
19	Nearest Air Port	:	Deoghar Airport at a distance of 128.5 Km in North-East direction
20	Nearest Forest	:	Divisional Forest Officer, Giridih certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
21	Road & Highways	:	NH 114A - Jamtara- Giridih Road at about 5.5 Km on South-West direction.
22	Approach Road	:	At a distance of 184 metres in East direction.

CO-ORDINATES

PILLAR ID	LATITUDE	LONGITUDE
P1	24°03'42.87866" N	86°00'47.54524" E

P2	24°03'44.05738" N	86°00'49.45997" E
P3	24°03'43.76196" N	86°00'50.08072" E
P4	24°03'43.63636" N	86°00'50.61568" E
P5	24°03'43.05924" N	86°00'50.49828" E
P6	24°03'42.94202" N	86°00'50.99569" E
P7	24°03'42.67814" N	86°00'51.42866" E
P8	24°03'41.85886" N	86°00'51.10704" E
P9	24°03'41.59652" N	86°00'51.78355" E
P10	24°03'41.45908" N	86°00'51.81271" E
P11	24°03'41.43744" N	86°00'52.45927" E
P12	24°03'41.57514" N	86°00'52.46759" E
P13	24°03'41.46577" N	86°00'52.85254" E
P14	24°03'41.11016" N	86°00'53.73587" E
P15	24°03'40.83491" N	86°00'53.73796" E
P16	24°03'40.51724" N	86°00'53.86601" E
P17	24°03'40.25743" N	86°00'53.56440" E
P18	24°03'40.41911" N	86°00'53.29148" E
P19	24°03'39.46972" N	86°00'52.80221" E
P20	24°03'40.05619" N	86°00'51.70162" E
P21	24°03'39.60677" N	86°00'51.37718" E
P22	24°03'39.44329" N	86°00'51.36905" E
P23	24°03'38.61569" N	86°00'51.09433" E
P24	24°03'38.44901" N	86°00'51.92939" E
P25	24°03'38.29720" N	86°00'52.39894" E
P26	24°03'37.23815" N	86°00'52.24777" E
P27	24°03'37.11899" N	86°00'52.44541" E
P28	24°03'37.09534" N	86°00'52.78288" E
P29	24°03'36.75964" N	86°00'52.74796" E
P30	24°03'36.12812" N	86°00'52.20004" E
P31	24°03'36.08338" N	86°00'51.92870" E
P32	24°03'35.79854" N	86°00'51.78100" E
P33	24°03'35.41108" N	86°00'51.72775" E
P34	24°03'35.25656" N	86°00'51.77578" E
P35	24°03'34.84217" N	86°00'51.54473" E
P36	24°03'34.41989" N	86°00'51.42618" E
P37	24°03'34.25814" N	86°00'51.68970" E
P38	24°03'34.16252" N	86°00'51.68351" E
P39	24°03'34.82384" N	86°00'49.47736" E
P40	24°03'34.93235" N	86°00'49.52052" E
P41	24°03'34.98552" N	86°00'49.76366" E
P42	24°03'35.85553" N	86°00'49.94438" E
P43	24°03'36.77969" N	86°00'50.51815" E
P44	24°03'36.92326" N	86°00'49.84067" E
P45	24°03'37.16647" N	86°00'49.13435" E
P46	24°03'37.50818" N	86°00'48.76448" E
P47	24°03'38.25608" N	86°00'48.37007" E
P48	24°03'39.14748" N	86°00'47.92003" E

P49	24°03'40.47631" N	86°00'47.56475" E
P50	24°03'41.64210" N	86°00'47.37636" E
P51	24°03'42.24982" N	86°00'47.70148" E
P52	24°03'42.69110" N	86°00'47.83298" E

LAND DETAILS

Khata no.	Plot no.
02	97 (P), 98 (P), 142 (P), 146 (P), 147 (P), 148 (P), 149 (P), 150 & 167 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Giridih vide letter no. 670/M, dated 19.07.2025.
2	CO	:	The CO, Bagodar, Giridih vide letter no. 141, dated 29.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in Khatian. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Giridih vide memo no. 688/M, dated 29.07.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 410, dated 27.02.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag East Forest Division vide letter no. 1219, dated 29.04.2023 certified that the distance of forest land is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Giridih District (Page no. 55, Sl. no. 15).
7	Gram Sabha	:	Gram Sabha conducted on 22.02.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Bokaro vide Memo No. 169, dated 12.08.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and

		affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized "OTFM" Method
2	Quarry Area	:	2.077 Ha. Life of Mine – 10 years
3	Waste Generation	:	57389 cum
4	Stripping Ratio	:	1:0.07
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m and 9 in numbers
7	Elevation of Mine	:	358 m AMSL to 349 m AMSL
8	Ground Level Elevation	:	349 m AMSL
9	Ultimate Working Depth	:	304 m AMSL
10	Water Table	:	280 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	91 kg/day
13	Diesel/Fuel requirement	:	435 litre/day

Production Details

Year	Production of Stone in cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in cum	Total Waste in cum
1 st Year	74224	200403	37050	3907	40957
2 nd Year	76076	205405	0	4004	4004
3 rd Year	76570	206739	0	4030	4030
4 th Year	79040	213408	0	4160	4160
5 th Year	80522	217409	0	4238	4238
Total	386432	1043365	37050	20339	57389

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan Period (Ha)	At Conceptual period (Ha)
Excavation	0.00	1.274	2.077 (0.462 Ha area shall be Backfilled, 1.321 Ha converted in to water reservoir & 0.294 Ha shall be left as dead benches)
Waste Dump	0.00	0.482	Nil (comes under quarry)
Road	0.00	0.006	0.00
Infrastructure	0.00	0.00	0.00
Safety Zone	0.00	0.732	0.732

Plantation			
Total	0.00	2.494	2.809
Unused Area	2.809	0.315	0.00
Total Lease Area	2.809		

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.732	1172	1600 tree per hectare	1st Year
Approach Road	184	368	2m X 2m spacing	1st year
Dead Bench	0.294	471	1600 tree per hectare	End of Mine
Backfilled area (level upto surface)	0.462	740	1600 tree per hectare	End of Mine
TOTAL		2751		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Toolda, Strictus & other Native Species				

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Project Cost

Budgetary Provision (in Lakhs) of Project Cost				
Particulars			Capital	Recurring
Land			0.00	173529.49
Infrastructure			700000.00	0.00
Mining Equipment			0.00	10600000.00
Equipment	Quantity	Rent per year		
Loader	1	600000		
Dumper	3	2000000		
Compressor	1	1000000		
Water Sprinkler	1	600000		

Rock Breaker	1	800000		
Excavator	2	800000		
Water Facility for Domestic Purpose "0.92" KLD (Annual Water Demand "276"KL @4L per Tanker, total number of tanker required ("69") and per tanker cost @Rs. 500)			0.00	34500.00
Statutory Clearances			500000.00	0.00
Mine Closure Cost for Plantation of "1211" number of tree @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance			363300.00	0.00
Mine Closure Cost for fencing around mine			100000.00	0.00
Environment Management Plan (EMP) Cost			1742900.00	1023090.00
Total			3406200.00	12731119.49

Environment Management Budget

Budgetary Provision (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "1540" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	462000.00	77000.00
Water Facility for Horticulture "9.24" KLD & Dust Suppression "11.236" KLD (Annual Water Demand "6142.8"KL @4L per Tanker, total number of tankers required ("1536") and per tanker cost @Rs. 500)	0.00	768000.00
Garland Drain & Desiltation Pond	280900.00	28090.00
Environment Monitoring & Compliance	0.00	50000.00
To prevent the impact of mining activities on these habitations under compliance of OM Z-11013/57/2014-IA.II (M) dated 29/10/2014 issued by MoEF & CC	1000000.00	100000.00
Total	1742900.00	1023090.00

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project	3 Stations	Six Monthly

	site only.		
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Solid Waste Management

In this applied lease area, the stone deposit is covered with 2m layer of intermixed soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 57389 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 28694 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 28694 cum in situ 35867.81 cum loose & 30487.64 cum compact waste shall be temporary dumped on the southern part of the applied lease area and it will cover about 0.482ha area. Garland drain shall be provided along the OB dump. This drain would collect surface run off from dump body. Water collected in this drain would be stored in a sedimentation tank, the treated water shall be released for natural runoff.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench

- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

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Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

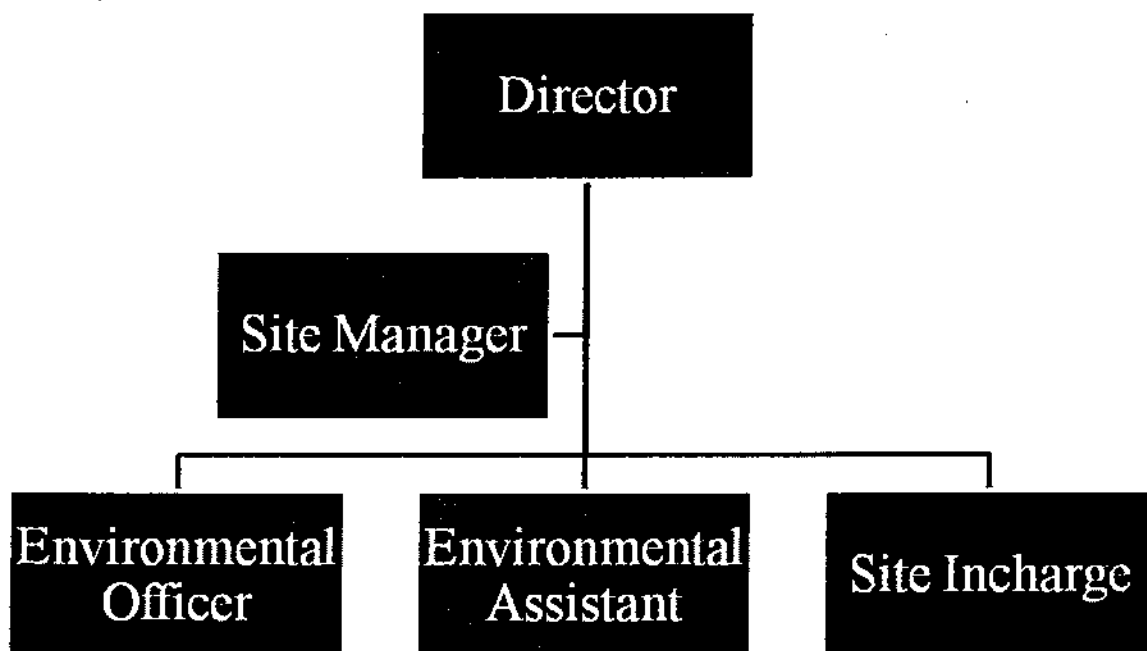
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Domangolgo Stone Deposit of M/s Anaya Enterprises (Prop. : Shri Rakesh Sen Gupta), Village : Domangolgo, Anchal : Bagodar, Distt. : Giridih, Jharkhand (2.809 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

11. Basgi Stone Deposit of Shri Braj Bhushan Yadav & Others, Village : Basgi, Anchal : Dhanwar, Distt. : Giridih, Jharkhand (1.57 Ha).

(Proposal no.: SIA/JH/MIN/ 550367 /2025)

Name of the consultant : Crystal Consultants, Ranchi, Jharkhand.

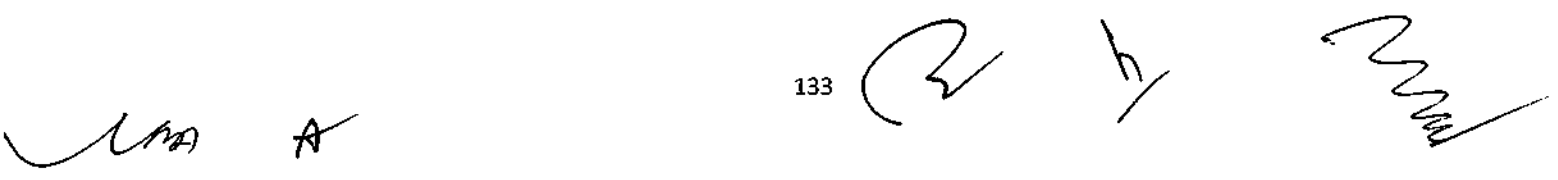
Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Giridih).

The project has been granted EC by DEIAA, Giridih vide letter no. 19/EC/DEIAA/Giridih, dated 10.02.2018.

CTE issued by JSPCB vide Ref. No. JSPCB/HO/RNC/CTE-12877298/2022/206 dated 10/05/2022.

CTO issued by JSPCB vide Ref. No. JSPCB/RO/HZB/CTO-15688032/2023/53 dated 18/03/2023.

The lease deed has been executed for the period from 26/02/2022 to 25/02/2032. The approved mining plan remains valid which was approved by Assistant Mining Officer, Giridih vide letter no. 2469/M, dated 08/08/2016.



As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Giridih which has been taken up for consideration on 09.09.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ -96 µg/m³ PM_{2.5} -567 µg/m³ SO₂ -18.2 NO₂ - 19.0 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 837/M, dated 02.09.2025 by DMO, Giridih is within the permissible limit of EC.

The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 2374, dated 19.08.2025.

A certification of the compliance of the conditions of previous EC issued by JSPCB has been submitted to SEAC. The Committee desired to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity – 9254 Cum per year or 24986 Tonnes per year.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Basgi Stone Deposit
2	Lessee:	: Partners - Sri Braj Bhushan Yadav and others
3	Lessee Address	: Tilaiya Basti, Ward No. 2, P.O.- Jhumritilaiya, District – Kodarma, Jharkhand
4	Lease Area	: 1.57 Ha. 3.87 Acre
5	Type of Land	: Non-Forest Raiyati Land
6	Project Cost	: Capital: Rs. 2890200.00
7	EMP Budget	: Capital: Rs. 1590200.00 Recurring: Rs. 798400.00 per year
8	New or Expansion	: Re- appraisal of DEIAA EC
9	Mineable Reserves	: 249098 Tonnes 92259 Cum
10	Mine Life	: Up to the lease period i.e. 26.02.2022 to 25.02.2032.

11	Man power	:	27
12	Water Requirement	:	16.02 KLD
13	Water Source	:	By authorised hired water tankers
14	DG Set / power	:	-
15	Crusher	:	No crusher
16	Nearest Water Body	:	Bareto River at a distance of 3 Km in North-West direction.
17	Nearest Habitation	:	Basgi Village at a distance of 0.6 Km in South direction
18	Nearest Rail Station	:	Raj Dhanwar railway station at a distance of 7 Km in North direction
19	Nearest Air Port	:	Ranchi Airport at a distance of 200 km in South-West direction
20	Nearest Forest	:	Divisional Forest Officer, Giridih certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
21	Road & Highways	:	Kodarma Giridih road at a distance of 15 Km in East direction
22	Approach Road	:	At a distance of 186 metres in West direction

CO-ORDINATES

PILLAR ID	LATITUDE	LONGITUDE
P1	24°22'34.13842" N	85°53'23.11080" E
P2	24°22'33.92026" N	85°53'23.47850" E
P3	24°22'33.73810" N	85°53'23.97592" E
P4	24°22'33.53556" N	85°53'23.80585" E
P5	24°22'33.53786" N	85°53'23.41140" E
P6	24°22'33.29530" N	85°53'23.41352" E
P7	24°22'33.04351" N	85°53'23.56501" E
P8	24°22'32.94214" N	85°53'23.81665" E
P9	24°22'32.34997" N	85°53'23.47501" E
P10	24°22'32.07828" N	85°53'24.14918" E
P11	24°22'31.80760" N	85°53'24.82080" E
P12	24°22'32.09660" N	85°53'25.05210" E
P13	24°22'32.31235" N	85°53'25.15117" E
P14	24°22'32.77963" N	85°53'25.53212" E
P15	24°22'32.47914" N	85°53'25.90336" E
P16	24°22'32.36408" N	85°53'26.04757" E
P17	24°22'32.35724" N	85°53'26.28946" E
P18	24°22'32.25515" N	85°53'26.44062" E
P19	24°22'31.86592" N	85°53'26.14960" E

P20	24°22'31.60996" N	85°53'26.08138" E
P21	24°22'31.48511" N	85°53'25.94443" E
P22	24°22'31.34647" N	85°53'26.04426" E
P23	24°22'31.31368" N	85°53'26.14596" E
P24	24°22'31.22314" N	85°53'26.11576" E
P25	24°22'31.11557" N	85°53'25.87722" E
P26	24°22'30.91919" N	85°53'25.84230" E
P27	24°22'30.72796" N	85°53'25.88471" E
P28	24°22'30.52243" N	85°53'25.93028" E
P29	24°22'30.49788" N	85°53'25.68718" E
P30	24°22'30.56916" N	85°53'25.61694" E
P31	24°22'30.76316" N	85°53'25.55830" E
P32	24°22'30.65578" N	85°53'25.26169" E
P33	24°22'30.57002" N	85°53'25.02470" E
P34	24°22'30.32753" N	85°53'25.02647" E
P35	24°22'30.11851" N	85°53'25.02798" E
P36	24°22'29.92318" N	85°53'25.02942" E
P37	24°22'29.92962" N	85°53'25.29269" E
P38	24°22'29.93909" N	85°53'25.68124" E
P39	24°22'29.94776" N	85°53'26.03591" E
P40	24°22'30.15422" N	85°53'26.02817" E
P41	24°22'30.37357" N	85°53'26.01992" E
P42	24°22'30.50558" N	85°53'26.42730" E
P43	24°22'30.41652" N	85°53'26.59711" E
P44	24°22'30.38351" N	85°53'26.78993" E
P45	24°22'30.24199" N	85°53'26.67962" E
P46	24°22'30.11534" N	85°53'26.58095" E
P47	24°22'29.87458" N	85°53'26.59243" E
P48	24°22'29.59270" N	85°53'26.46715" E
P49	24°22'29.50057" N	85°53'26.61918" E
P50	24°22'29.57884" N	85°53'26.73121" E
P51	24°22'29.41730" N	85°53'26.99084" E
P52	24°22'29.14561" N	85°53'26.88994" E
P53	24°22'28.91334" N	85°53'26.88727" E
P54	24°22'28.66343" N	85°53'26.82370" E
P55	24°22'28.63063" N	85°53'27.04466" E
P56	24°22'28.77308" N	85°53'27.11857" E
P57	24°22'28.77434" N	85°53'27.28759" E
P58	24°22'28.68920" N	85°53'27.41042" E
P59	24°22'28.55633" N	85°53'27.47260" E
P60	24°22'28.39285" N	85°53'27.46464" E
P61	24°22'28.19827" N	85°53'27.32546" E
P62	24°22'27.93580" N	85°53'27.30430" E
P63	24°22'27.80645" N	85°53'27.26315" E
P64	24°22'27.77588" N	85°53'27.55331" E
P65	24°22'27.71245" N	85°53'27.81679" E
P66	24°22'27.49876" N	85°53'27.76981" E

P67	24°22'27.10661" N	85°53'27.66242" E
P68	24°22'26.68116" N	85°53'27.70840" E
P69	24°22'26.42653" N	85°53'27.69425" E
P70	24°22'26.15538" N	85°53'27.67920" E
P71	24°22'26.03842" N	85°53'27.96936" E
P72	24°22'25.90576" N	85°53'28.29858" E
P73	24°22'25.66085" N	85°53'28.32889" E
P74	24°22'25.52927" N	85°53'28.56952" E
P75	24°22'25.26348" N	85°53'28.70729" E
P76	24°22'25.13046" N	85°53'28.75070" E
P77	24°22'24.96605" N	85°53'28.61596" E
P78	24°22'24.81002" N	85°53'28.50947" E
P79	24°22'24.93890" N	85°53'28.36046" E
P80	24°22'25.08780" N	85°53'28.18831" E
P81	24°22'25.38628" N	85°53'28.15217" E
P82	24°22'25.56980" N	85°53'27.95802" E
P83	24°22'25.62211" N	85°53'27.76272" E
P84	24°22'25.67312" N	85°53'27.67776" E
P85	24°22'25.82936" N	85°53'27.61465" E
P86	24°22'25.94924" N	85°53'27.54222" E
P87	24°22'26.04511" N	85°53'27.31427" E
P88	24°22'26.15891" N	85°53'27.04081" E
P89	24°22'26.35842" N	85°53'27.05770" E
P90	24°22'26.67104" N	85°53'27.08416" E
P91	24°22'26.68854" N	85°53'26.85347" E
P92	24°22'26.70953" N	85°53'26.57717" E
P93	24°22'26.72202" N	85°53'26.41229" E
P94	24°22'26.65603" N	85°53'26.32740" E
P95	24°22'26.40918" N	85°53'26.22941" E
P96	24°22'26.13756" N	85°53'26.12162" E
P97	24°22'26.37584" N	85°53'25.77206" E
P98	24°22'26.63886" N	85°53'25.27206" E
P99	24°22'26.91455" N	85°53'25.38434" E
P100	24°22'27.24272" N	85°53'25.51801" E
P101	24°22'27.50128" N	85°53'25.62335" E
P102	24°22'27.53533" N	85°53'25.15031" E
P103	24°22'27.58066" N	85°53'24.52150" E
P104	24°22'27.62267" N	85°53'23.93851" E
P105	24°22'27.73715" N	85°53'23.96209" E
P106	24°22'27.78319" N	85°53'23.66869" E
P107	24°22'27.81692" N	85°53'23.57826" E
P108	24°22'28.05013" N	85°53'23.62657" E
P109	24°22'28.34846" N	85°53'23.68838" E
P110	24°22'28.54747" N	85°53'23.72964" E
P111	24°22'28.72528" N	85°53'23.57783" E
P112	24°22'29.12192" N	85°53'23.66452" E
P113	24°22'29.57657" N	85°53'23.76391" E

P114	24°22'30.15041" N	85°53'23.88314" E
P115	24°22'30.67561" N	85°53'23.97401" E
P116	24°22'31.06034" N	85°53'24.11164" E
P117	24°22'31.42333" N	85°53'24.24149" E
P118	24°22'31.61640" N	85°53'23.76978" E
P119	24°22'31.82261" N	85°53'23.26603" E
P120	24°22'32.09635" N	85°53'22.52663" E
P121	24°22'32.51640" N	85°53'22.63106" E
P122	24°22'32.54282" N	85°53'22.42190" E
P123	24°22'32.83777" N	85°53'22.52710" E
P124	24°22'33.17239" N	85°53'22.64647" E
P125	24°22'33.50406" N	85°53'22.71401" E
P126	24°22'33.80570" N	85°53'22.79353" E

LAND DETAILS

Khata no.	Plot no.
01	50, 51 & 58
02	34, 33, 56, 65, 66, 67, 35, 68, 71 & 72
06	52
10	39 & 40
07	41, 31 & 38

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by Assistant Mining Officer, Giridih vide letter no. 2420/M, dated 02.08.2016. ii. Lease deed valid from 26.02.2022 up to 25.02.2032.
2	CO	:	The CO, Dhanwar vide letter no. 373, dated 21.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatliyan. During the appraisal it was seen that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Giridih vide memo no. 836/M, dated 02.09.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 199, dated 15.02.2025 certified that the proposed project site is outside Eco

			Sensitive Zone of Koderma Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Giridih West Forest Division vide letter no. 226, dated 29.02.2016 certified that the distance of notified forest land is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Giridih District (Page no. 42, Sl. no. 52).
7	Gram Sabha	:	Gram Sabha conducted on 19.08.2016.
8	Mine Plan / Scheme Approval	:	Approved by AMO, Giridih vide Letter No. 2469, dated 08.08.2016.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Giridih vide letter no. 19/EC/DEIAA/Giridih, dated 10.02.2018.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 2374, dated 19.08.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-12877298 /2022 /206, dated 10.05.2022.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/HZB/CTO-15688032 /2023/53, dated 18.03.2023 valid up to 31.03.2027.
13	Production Report	:	Production report issued by DMO, Giridih vide letter no. 837/M, dated 02.09.2025.
14	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized "OTFM" Method
2	Quarry Area	:	0.90 Ha. Life of Mine – Up to the lease period i.e. 26.02.2022 to 25.02.2032.
3	Waste Generation	:	12500 Tonnes
4	Stripping Ratio	:	1:0.04
5	Working Days	:	300
6	Bench: size & No	:	3m to 3m and 9 in numbers
7	Elevation of Mine	:	384 m AMSL to 373 m AMSL
8	Ground Level	:	373 m AMSL

	Elevation		
9	Ultimate Working Depth	:	353 m AMSL
10	Water Table	:	348 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	10 kg/day
13	Diesel/Fuel requirement	:	50 litre/day

Production Details

Year	Production of stone in Tonnes	Removal of soil in Tonnes
1 st	24986	6194
2 nd	24978	2430
3 rd	24986	Nil
4 th	24940	3876
5 th	24952	NIL
Total	124842	12500

Land Use

Category	Existing Land Use pattern	Land Use pattern after first five years plan period	Land Use pattern after life of the mine
	Area in Ha.	Area in Ha.	Area in Ha.
Quarry+ Road + Backfilling + Reservoir	0.01 (Road)	0.72	0.90 (Waterbody)
Green Belt + Road	0	0.67	0.67 (Plantation)
Total Area in Use	0.01	1.39	1.57
Balance Area Unused	1.56	0.18	Nil
Total Applied Area	1.57	1.57	1.57

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.670	1072	1600 tree per hectare	1st Year
Approach Road	186	372	2m X 2m spacing	1st year
TOTAL		1444		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: Bombas, Nutans, Toolda, Strictus & other Native Species				

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Project Cost

Budgetary Provision (in Lakhs) of Project Cost				
Particulars			Capital	Recurring
Land			0.00	96988.71
Infrastructure			700000.00	0.00
Mining Equipment			0.00	7800000.00
Equipment	Quantity	Rent per year		
Dumper	2	2000000		
Jack Hammer	2	600000		
Compressor	1	1000000		
Excavator	2	800000		
Water Facility for Domestic Purpose "1.08" KLD (Annual Water Demand "324"KL @4L per Tanker, total number of tanker required ("81") and per tanker cost @Rs. 500)			0.00	40500.00
Statutory Clearances			500000.00	0.00
Mine Closure Cost for Plantation of "0" number of tree @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance			0.00	0.00
Mine Closure Cost for fencing around mine			100000.00	0.00
Environment Management Plan (EMP) Cost			1590200.00	798400.00
Total			2890200.00	8735888.71

Environment Management Budget

Budgetary Provision (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring

Plantation of "1444" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	433200.00	72200.00
Water Facility for Horticulture "8.664" KLD & Dust Suppression "6.28" KLD (Annual Water Demand "4483.2"KL @4L per Tanker, total number of tankers required ("1121") and per tanker cost @Rs. 500)	0.00	560500.00
Garland Drain & Desiltation Pond	157000.00	15700.00
Environment Monitoring & Compliance	0.00	50000.00
To prevent the impact of mining activities on these habitations under compliance of OM Z-11013/57/2014-IA.II (M) dated 29/10/2014 issued by MoEF & CC	1000000.00	100000.00
Total	1590200.00	798400.00

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Solid Waste Management

Describe the type, quality and quantity of overburden, mineral reject etc. available and their disposal practice. If no utilization of waste material is proposed, the manner in which the waste material will be stabilized should be described. The protective measures to be taken for prevention of siltation, erosion and dust generation from these waste materials should also be described. If toxic and hazardous elements present in the waste material the protective measures to be taken for prevention of their dispersal in the air environment, leaching in the surface and ground water etc should be described.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate.
- Plantation of tree on both side of road.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to

Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable

levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.

- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

The EMP Cell objectives are:

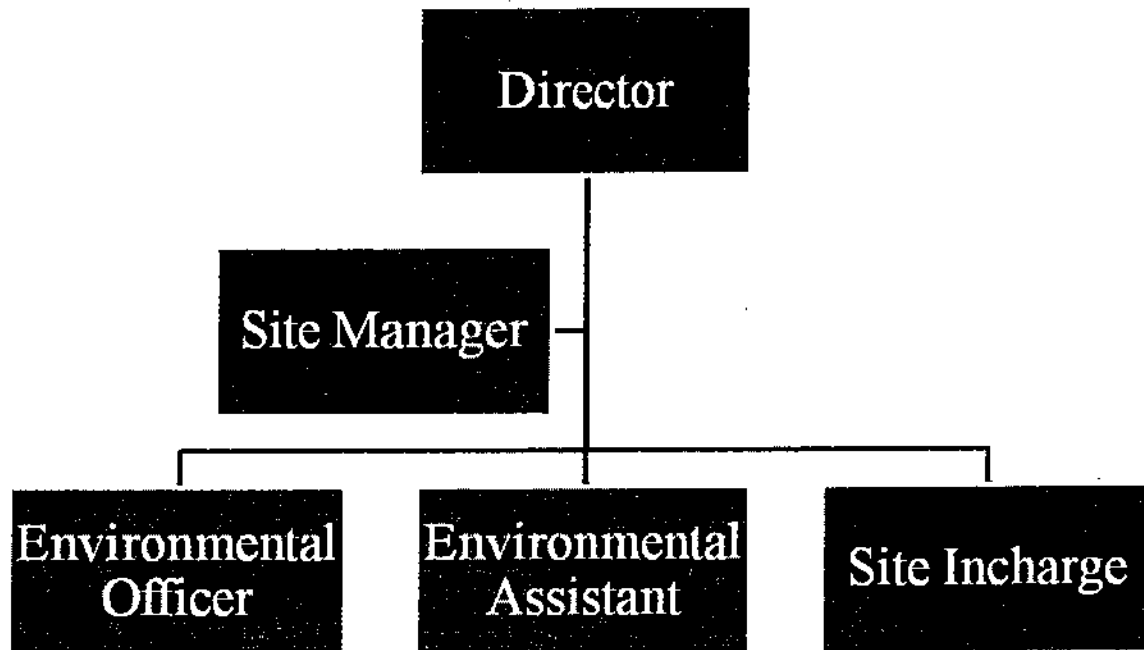
- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection

- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records

- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Basgi Stone Deposit of Shri Braj Bhushan Yadav & Others, Village : Basgi, Anchal : Dhanwar, Distt. : Giridih, Jharkhand (1.57 Ha) is

recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
- II. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- III. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024.of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- IV. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- V. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- VI. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VII. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

Day 2 : 10th, 2025 [Wednesday]

Consideration of proposals :

1. Madhuband Colliery with 1.5 MTPA using open cast and underground mining of M/s Bharat Coking Coal Limited, Village : Madhuband, Sidpoki (part), Keshargarh (Part), Saderiyadih (Part), Pandubitha (Part), Bansjora (Part) and Mohanpur (Part), Anchal : Baghmara, Distt.: Dhanbad, Jharkhand (393.77 Ha).

Proposal no.: SIA/JH/CMIN /540839 /2025)

Name of the consultant : Vardan EnviroNet LLP, Gurugram, Haryana

This is a new project which has been taken for appraisal on 10.09.2025.

Project Sector: 1(a) Mining of Minerals (Coal), Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

Approval of Mining Plan and Mine Closure Plan: Mining Plan along with Progressive Mine Closure Plan (PMCP) for Madhuband Colliery has been approved in 416th BCCL Board Meeting dated 30.12.2024 vide letter BCCL/CS/AF-1(A)/22(H), dated 13.01.2025.

The Project of Cluster XV (4 UG mines with a normative production of 0.325 MTPA with a peak prod. of 0.423 MTPA in a combined ML area of 1696.55 ha) of M/s Bharat Coking Coal Ltd located in Jharia coalfields has obtained Environmental Clearance vide F.No. J-11015/100/2011-IA.II(M) dated 16.12.2013. The four mines were Kharkharee Colliery (584 Ha.) for production of 0.092 MTPA, Madhuban Colliery (393.77 Ha.) for production of 0.113 MTPA, Phularitand Colliery (340.88 Ha.) for production of 0.120 MTPA and Dharmaband Colliery (377.90 Ha.). The instant proposal is for Madhuban Colliery (393.77 Ha.) only for proudction of 1.5 MTPA underground and open cast mining. The amendment/partial surrender will be obtained from concerned authority to delineate Madhuban Colliery from cluster XV. In view of the same it may be considered as a fresh EC application.

Baseline data collection was completed from October, 2023 to December, 2023.

The summary of baseline data is given below.

Parameters	Baseline status
AmbientAirQuality	PM10 – 43.6 µg/m ³ to 83.3 µg/m ³
	PM2.5 – 19.8 µg/m ³ to 53.2 µg/m ³
	SO2 – 14.1 µg/m ³ to 25.7 µg/m ³
	NOx – 18.0 µg/m ³ to 31.9 µg/m ³
	CO – 00.48 mg/m ³ to 0.94 mg/m ³
Noise Level	The Leq values for day time was observed to be 39.6 dB(A) to

	70.2 dB(A), while during night time 31.5 dB(A) to 59.2 dB(A).
Water Quality	Ground Water: All the Parameters Like pH varies from 7.21 to 7.93, Total Hardness varies from 228 mg/L to 280 mg/L, Total Dissolved Solids varies from 315 mg/L to 381 mg/L, Chlorides – 41.85 mg/L to 54.38 mg/L etc. are found within the permissible limits. Surface Water: All the Parameters Like pH varies from 7.26 to 7.92, Total Hardness varies from 347 mg/L to 424 mg/L, Total Dissolved Solids varies from 533 mg/L to 681 mg/L, Dissolved Oxygen – 5.80 mg/L to 8.90 mg/L etc. are found within the permissible limits. Total Coliform count is measured 580 to 1400 MPN/100ml.
Soil Quality	pH- 7.38 to 7.92 Organic matter- 0.42 % to 0.58 % Electrical Conductance - 358 μS/cm to 537 μS/cm Available Nitrogen - 151.92 kg/ha to 165.88 kg/ha Available Phosphorous -15.66 kg/ha to 19.72 kg/ha Available Potassium - 170.50 kg/ha to 189.42 kg/ha
Ecology and Biodiversity	No National Park, Wild Life Sanctuary, Bio-sphere Reserve, Elephant Reserve, Tiger Reserve is present within 10 km of mining lease area. Schedule-I species present in the study area. However, a site specific WLCP has been prepared for conservation of Wildlife.
Socio Economic Survey	The proposed project will provide positive impact to the nearby area. The project will provide direct and indirect employment to nearby villagers.

Project and Location Details:

Sl.	Parameter		Details
1.	Project Name	:	Madhuband Colliery with 1.5 MTPA using open cast and underground mining. Over an area of 393.77 Ha located at Village: Madhuband, Sidpoki (Part), Keshargarh (Part), Saderiyadih (Part), Pandubitha (Part), Bansjora (Part) and Mohanpur (Part) District- Dhanbad, State – Jharkhand Proposed by M/s Bharat Coking Coal Limited.
2.	Lessee:	:	M/s Bharat Coking Coal Limited.

3.	Address	:	Village: Madhuband, Sidpoki (Part), Keshargarh (Part), Saderiyadih (Part), Pandubitha (Part), Bansjora (Part) and Mohanpur(Part) District- Dhanbad, State – Jharkhand.
4.	Lease Area	:	393.77 Ha 973.026 Acres
5.	Type of Land	:	Non-Forest
6.	Project Cost	:	Rs. 1018 Crores
7.	EMP Budget	:	EMP Budget will be submitted with EIA report
8.	New or Expansion	:	New
9.	Mineable Reserves	:	Cu.M.: 6,93,20,000 Million Tonnes:103.98
10.	Mine Life	:	67 Years (OC - 9 Years & UG – 67 Years)
11.	Manpower	:	Total manpower is assessed as ~1086.
12.	Water Requirement	:	Total Water Requirement is 2100 KLD Industrial Water Requirement: 1500 KLD Domestic Water Requirement: 600KLD
13.	Water Source	:	Water discharged from the mine will be treated and will be used for industrial purpose. Existing water treatment plant will be used for supply of potable water.
14.	DG Set / power	:	The power requirement is 16 MW, which will be sourced from BCCL Substation. 2 nos of 1010 kVA DG set with 10 meter stack height are proposed for power backup.
15.	Crusher	:	Not Applicable
16.	Nearest Water Body	:	The drainage of the area is controlled by Khudia Nallah flowing south-westerly, which ultimately joins the Jamunia river further west of the area. Khudiajore is to be diverted for extracting coal by opencast, which will be diverted in the 5 th Year. Other waterbodies • Jamuiya N - 0.70 Km in W • Damodar River - 3.58 Km in S • Garga Nadi - 3.72 Km in S • Barkijharia N - 5.34 Km in NW • Barama Jhor- 7.35 Km in SE • Katri Nadi - 7.5 Km in E

17.	Nearest Habitation	:	Village: Madhuband, Sidpoki (Part), Keshargarh (Part), Saderiyadih (Part), Pandubitha (Part), Bansjora (Part) and Mohanpur(Part) inside the Mine Lease Area.
18.	Nearest Rail Station	:	Nearest railway station is Dhanbad, located 35 km away (by road) which is on the main line of Eastern Railway.
19.	Nearest Airport	:	Nearest airport is Durgapur which is located 100 km away.
20.	Nearest Forest	:	• PF ~ 3.48 Km in SW • PF ~ 4.43 Km in N • PF ~ 4.73 Km in N • PF ~ 6.16 Km in N • PF ~ 6.18 Km in N • PF ~ 6.30 Km in N • PF ~ 6.96 Km in N • PF ~ 7.32 Km in N • PF ~ 7.44 Km in N • PF ~ 7.55 Km in N • PF ~ 7.61 Km in N • PF ~ 7.89 Km in N • PF ~ 7.96 Km in N • PF ~ 8.09 Km in NW • PF ~ 8.59 Km in NE • PF ~ 8.85 Km in NW • PF ~ 8.94 Km in N • PF ~ 9.22 Km in W • PF ~ 9.33 Km in NW • PF ~ 9.59 Km in NW
21.	Road & Highways	:	• NH-18 ~ 1.63 Km in S

CO-ORDINATES

1	Latitude	:	From 23° 45'30" N	To 23° 46'30" N
2	Longitude	:	From 86° 12'00" E	To 86° 13'30" E

LAND DETAILS

The lease area is situated in Village: Madhuband, Sidpoki (Part), Keshargarh (Part), Saderiyadih (Part), Pandubitha (Part), Bansjora (Part) and Mohanpur(Part) District- Dhanbad, State – Jharkhand.

Village: Madhuband

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27	52	43	89	97	54	70	98	58	86
33	85	60	42	25	17	103	2	19	78
83	94	112	30	110	11	100	1	50	5
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20	102	88	75	35	96	108	61	62	104
22	73	39	111	74	28	116	55	72	92
110	56	66	3	118	15	90	66	54	23
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73	26	16	83	76	108				

Khasra No.									
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1703	1704	1705	1706	1707	1708	1709	1710	1711	1712
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1723	1724	1725	1726	1727	1728	1729	1730	1731	1732
1733	1734	1735	1736	1737	1738	1739	1740	1741	1742
1743	1744	1745	1746	1747	1748	1749	1750	1751	1752
1753	1754	1755	1756	1757	1758	1759	1761	1762	1763
1764	1765	1766	1767	1768	1769	1770	1771	1772	1773
1774	1775	1776	1777	1778	1779	1780	1781	1782	1783
1784	1785	1786	1787	1788	1789	1790	1791	1792	1793
1794	1795	1796	1797	1798	1799	1800	1801	1802	1803
1804	1805	1806	1807	1808	1809	1810	1811	1812	1813
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1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
1945	1946	1947	1948	1949	1950	1951	1952	1953	1954
1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
1975	1978	1979	1980	1981	1982	1983	1984	1985	1986
1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
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2067	2068	2069	2070	2071	2072	2073	2074	2075	2076
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2097	2098	2099	2100	2101	2102	2103	2104	2105	2106
2107	2108	2109	2110	2111	2112	2113	2114	2115	2116
2117	2118	2119	2120	2121	2122	2123	2124	2125	2126
2127	2128	2129	2130	2131	2132	2133	2134	2135	2136
2137	2138	2139	2140	2141	2142	2143	2144	2145	2146
2147	2148	2149	2150	2151	2152	2153	2154	2155	2156
2157	2158	2159	2160	2161	2162	2163	2164	2165	2166
2167	2168	2169	2170	2171	2172	2173	2174	2175	2176
2177	2178	2179	2180	2181	2182	2183	2184	2185	2186
2187	2188	2189	2190	2191	2192	2193	2194	2195	2196
2197	2198	2199	2200	2201	2202	2203	2204	2205	2206
2207	2208	2209	2210	2211	2212	2213	2214	2215	2216
2217	2218	2219	2220	2221	2222	2223	2224	2225	2226
2227	2228	2229	2230	2231	2232	2233	2234	2235	2236
2237	2238	2239	2240	2241	2242	2243	2244	2245	2246
2247	2248	2249	2250	2251	2252	2253	2254	2255	2256
2257	2258	2259	2260	2261	2262	2263	2264	2265	2266
2267	2268	2269	2270	2271	2272	2273	2274	2275	2276
2277	2278	2279	2280	2281	2282	2283	2285	2286	2287
2288	2289	2290	2292	2293	2294	2295	2296	2297	2298
2299	2300	2302	2303	2304	2305	2306	2307	2308	2309
2310	2311	2312	2313	2314	2315	2316	2317	2318	2319
2320	2321	2322	2323	2324	2326	2327	2328	2329	2330
2331	2332	2333	2334	2335	2336	2337	2338	2339	2340
2341	2342	2343	2344	2345	2346	2347	2348	2349	2350
2353	2354	306/23 55	1742/2 356	1472/2 357	1440/2 358	2113/2 359	652/23 60	485/23 61	1428/2 362
208/23	1746/2	1427/2	1429/2	2143/2	2228/2	782	790	886	1190

63	364	365	366	367	368				
1220	1230	1240	1242	1263	1281	1297	1319	1333	1334
1337	1343	1344	1357	1371	1383	1384	1390	1391	1429
1472	1644	2325	1414	1760	1924	1976	1977	2291	

Village: Mohanpur

Khata no.									
1	2	3	4	5	6				

Khasra no.									
10	19	24	25	26	29	31	32	37	43
46	73	8	12	13	14	15	16	17	18
20	38	39	40	41	42	45	49	64	66
71	9	11	21	22	23	27	28	30	44
47	48	50	51	52	53	54	55	56	57
58	59	60	61	62	63	65	67	68	69
70	72								

Village: Keshargarh

Khata no.									
134	71	132	136	83	106	9	65	22	33
135	53	34	27	52	60	105	66	107	124
104	62	120	109	98	73	72	97	108	48
119	101	89	15	129	128	70	76	122	78
32	7	44	57	54	38	56	130	14	64

Khasra no.									
727	728	729	730	832	833	868	869	870	871
872	873	874	875	876	877	878	878	879	880

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881	882	883	884	885	886	887	888	889	890
891	892	893	894	895	896	897	898	899	900
901	902	903	904	905	906	907	908	909	910
911	912	913	914	915	916	917	918	919	920
921	922	923	924	925	926	927	928	929	930
931	932	933	934	935	936	937	938	939	940
941	942	943	944	945	946	947	948	949	950
951	952	953	954	955	956	957	958	959	960
961	962	963	964	965	966	967	968	969	970
971	972	973	974	975	976	977	978	979	980
981	982	983	984	985	986	987	988	989	990
991	992	993	994	995	996	997	998	999	1000
1001	1002	1003	1004	1005	1006	1007	1008	1009	1010
1011	1012	1013	1014	1015	1016	1017	1018	1019	1020
1021	1022	1023	1024	1025	1026	1027	1028	1029	1030
1031	1032	1033	1034	1035	1036	1037	1038	1039	1040
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1051	1052	1053	1054	1055	1056	1057	1058	1059	1060
1061	1062	1063	1064	1065	1066	1067	1068	1069	1070
1071	1072	1073	1074	1075	1076	1077	1078	1079	1080
1081	1082	1083	1088	1091					

Village: Bansjora

Khata no.									
113	158	311	334	157	55	39	157	167	270
167	198	77	126	197	274				

Khasra no.									
2	3	8	14	1601	1602	1603	1604	1605	1606

1607	1615	1616	1617	1618	1619	1620	1621	1622	1623
1624	1627	1628	1629	1630					

Village: Shidpoki

Khata no.									
47	15	16	49	33	22	7	5	10	26
20	13	30	9	34	50	48	51	2	3
18	41	46	38	43	28	32	23	11	6
31									

Khasra no.									
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	148	149	150	151	152	153	154
159	160	161	162	163	164	165	166	167	168
325	326	330	331	332	333	334	335	336	337
338	339	340	341	342	343	344	345	346	347
348	349	350	351	352	353	354	355	356	357
358	359	360	361	362	363	364	365	366	367
368	369	370	371	372	373	374	375	376	377
378	379	380	381	382	383	384	385	386	387
388	389	390	391	392	393	394	395	396	397
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418	419	420	421	422	423	424	425	426	427

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438	439	440	441	442	443	444	445	446	447
448	449	450	451	452	453	454	455	456	457
458	459	460	461	462	463	464	465	466	467
468	469	470	471	472	473	474	475	476	477
478	479	483	484						

Village: Sadariyadih

Khata no.									
64	49	60	53	85	68	4	58	84	6
79	75	29	76	17	56	67	44	77	15
8	5	74	39	7	32	83	57	82	80
24	34	37	42	21	27	10	36	65	16
61	19								

Khasra no.									
829	830	831	832	833	834	835	836	837	838
839	840	841	842	843	844	845	846	847	848
849	850	851	852	853	854	855	856	857	858
859	860	861	862	863	864	865	866	867	868
869	870	871	872	873	874	875	876	877	878
879	880	881	882	883	884	885	886	887	888
889	890	893	953	955	956	958	959	960	961
962	963	964	965	966	967	968	969	970	971
972	973	974	975	976	977	978	979	980	981
982	983	984	985	986	987	988	989	990	991
992	993	994	995	996	997	998	999	1000	1001
1002	1003	1004	1005	1006	1007	1008	1009	1010	1011

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1052	1053	1054	1055	1056	1057	1058	1059	1060	1061
1062	1063	1064	1065	1066	1067	1068	1069	1070	1071
1072	1073	1074	1075	1076	1077	1078	1079	1080	1081
1082	1083	1084	1085	1086	1087	1088	1089	1090	1091
1092	1093	1094	1095	1096	1097	1098	1099	1100	1101
1102	1103	1104	1105	1106	1107	1108	1109	1110	1111
1112	1113	1114	1115	1116	1117	1118	1119	1120	1121
1122	1123	1124	1125	1126	1127	1128	1129	1130	1131
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1163	1164	1165	1166	1167	1168	1169	1170	1171	1172
1173	1174	1175	1176	1177	1179	1180	1181	1182	1183
1184	1185	1186	1187	1188	1189	1190	1191	1192	1193
1194	1195	1196	1197	1198	1199	1200	1201	1201	1203
1204	1205	1206	1207	1208	1209	1210	1211	1212	1213
1214	1215	1216	1217	1218	1219	1220	1221	1222	1223
1224	1225	1226	1227	1228	1229	1230	1231	1232	1233
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1247	1248	1249	1250	1251	1252	1253	1254	1255	1266
1267	1268	1269	1270	1271	1272	1273	1274	1275	1276
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1287	1288	1289	1290	1291	1293	1294	1295	1296	1309

1310	1311	1312	1314	1315	1316	1317	1319	1320	1321
1322	1323	1703							

Village: Pandhuabhita

Khata no.									
15	10	2	33	32					

Khasra no.									
134	137	251	254	255	38	41	125	126	127
128	129	130	131	132	133	135	136	138	252
253									

STATUTORY CLEARANCES

1	Land Document	:	The mining lease has been vested through the Coking Coal (Nationalisation) Act, 1972 and Coal Mines (Nationalisation) Act, 1973 and Mineral Concession (Amendment) Rules 2021.
2	CO	:	The CO, Baghmara (Dhanbad) vide letter no. 728, dated 03.06.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 911, dated 28.05.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
4	DFO Territorial	:	Divisional Forest Officer, Dhanbad Forest Division vide letter no. 1253, dated 29.05.2025 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
5	Mine Plan Approval	:	Mining Plan along with Progressive Mine Closure Plan (PMCP) for Madhuband Colliery has been approved in 416 th BCCL Board Meeting dated 30.12.2024 vide letter BCCL/CS/AF-1(A)/22(H), dated 13.01.2025.

WORKING DETAILS

1.	Mining Method	:	Mining is proposed by both opencast and UG methods

2.	Quarry Area	:	End of Life –79.53 ha	Life of Mine – 67 Years (OC - 9 Years & UG – 67 Years)
3.	Waste Generation	:	Total waste proposed to be generated is 66.82 Mbcum and out of this 22.36Mbcum is proposed to be dumped in external dump and rest to be dumped internally. The waste is proposed to be dumped in two external dumps, initially in the southern part of the block and in the north eastern part of the block. External dump is proposed in north eastern part (Ex Dump-1), 39.04 Ha is proposed to accommodate 15.65 Mbcum. External dump 2 is proposed in southern part of the lease (Sector C) in an area of 45.05Ha which will accommodate 6.71 Mbcum. External dumping is proposed till Year 7 and internal dumping will partly commence.	
4.	Stripping Ratio	:	10.38 cum/tonne	
5.	Size of the Bench	:	Maximum bench height (m) for opencast workings - 9 Meter Bench width (m) for opencast workings – 9 Meter Bench slope - 70°	
6.	Working Days	:	300 days/ year, 4 overlapping shifts of 6 hours each	
7.	Elevation range of the mine site	:	Minimum- 189.02 m RL Maximum- 227.66 m RL	
8.	Topography of Mine	:	Undulating topography with a gentle slope towards west	
9.	Explosive Requirement	:	Consumption of Explosive have been recalculated which is now 30 Kg/day for underground Mining operations and 8 Tonne /day for Opencast operations.	
10.	Diesel/Fuel requirement	:	20 KI / Day	

Production Details:

Year (s)	Production Plan		Total Coal (Mt)
	OC (upto 11 year)	UG	
1	-	-	-
2	-	0.14	0.14
3	0.14	0.16	0.30
4	0.45	0.30	0.75
5-8	0.80	0.30	1.10
9	1.05	0.30	1.35
10	1.05	0.45	1.50
11	0.55	0.45	1.00
12- 31	-	0.45	0.45
32	-	0.90	0.90
33-63	-	1.20	1.20
64	-	1.00	1.00
65	-	1.00	1.00
66	-	0.50	0.50
67	-	0.36	0.36
Grand Total	6.44	52.96	59.40

LAND USE

Pre Mining - Land use of Madhuband Colliery is as below:

Land Type		Area
Tenancy	Agricultural	87.2
	Township/ Homestead land	2
	Grazing	--
	Barren	104.6
	Road	--
	Community/ other use	--
	Sub-total	193.80
BCCL	service buildings/ Mine infrastructure	4
	Coal stack	2.6
	Homestead	8
	Plantation	2

	Road	2.23
	Barren	80.74
	Sub-total	99.57
Govt Non-Forest	Agricultural	0
	Township	--
	Grazing	--
	Barren/other use	71.21
	Water Bodies	6.82
	Sub-total	78.03
Forest	Reserve	0
	Protected	0
	Railway	22.37
	Free-Hold	0
Total		393.77

During mining Land use details

S. No	Land Use	During mining (Ha)
1	External Dump area	84.090
2	Top Soil dump area	3.000
3	Open Pit/ Excavation	79.530
4	Roads	3.920
5	Infrastructure/ Built up area	4.610
6	Greenbelt area	4.330
7	River diversion channel	2.790
8	Settling Pond	1.160
9	Coal Stack & CHP	2.140
10	Fly ash dumping, if any	-
11	Undisturbed Area	208.200
Total		393.77

Post mining Land use details

S.No	Land Use	Land use area Post Mining (Ha)					
		Plantation	Water Body	Public Use	Undisturbed	Others	Total
1	External Dump area	84.09	-	-	-	-	84.09
2	Top Soil dump area	3.00	-	-	-	-	3.00

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3	Open Pit/ Excavation	63.95	15.58	-	-	-	79.53
4	Roads	-	-	3.92	-	-	3.92
5	Infrastructure / Built up area	4.61	-	-	-	-	4.61
6	Greenbelt area	4.33	-	-	-	-	4.33
7	River diversion channel	-	2.79	-	-	-	2.79
8	Settling Pond	1.16	-	-	-	-	1.16
9	Coal Stack & CHP	2.14	-	-	-	-	2.14
10	Fly ash dumping, if any	-	-	-	-	-	-
11	Undisturbed Area	-	-	-	208.20	-	208.20
Total		163.28	18.37	3.92	208.20	-	393.77

ENVIRONMENT MANAGEMENT

Green Belt Development

The Boundary greenbelt will start with operation of mine. The progressive and post mining plantation will be done from 9th year onwards. Total 163.28 Ha. will be under plantation after the closure of mining operations.

As per EC dated 16.12.2013, Total afforestation plan shall be implemented covering an area of 621.28 Ha. out of which plantation over an area of 80.72 Ha. has been carried out till date in the Cluster XV, breakup of same will be provided in the EIA/EMP report.

The general considerations for green belt plan are as follows:

- Planting of trees shall be undertaken in rows around the roads and external dump.
- Local/indigenous fast-growing trees shall be planted.
- The trees shall be protected by plantation of non-palatable shrub species to avoid browsing by animals.

- Watering and manuring shall be done at regular intervals. Regular monitoring on the growth of the plants shall be done.
- It is proposed to continue developing the wide green belts and plantation. The density of the plantation shall be 2500 trees per hectare shall be planted or consultation from reputed agencies in green belt development can be sought.
- 3-tier plantation shall be carried out, i.e., 3 layers of plantation viz. grasses/herbs, shrubs and trees shall be planted. Grasses/herbs will help bind the soil together thus preventing soil erosion, and shrubs and trees will help break the wind at different altitudes thus preventing the spread of dust.
- Apart from this green belt, plantation shall also be done surrounding the official buildings.

Solid Waste Management

Total OB Removal for Opencast operations - 62.37M.Cum

Total Topsoil Removal for Opencast operations – 4.45 M.Cum

Water Pollution Control Measures:

1. The clogged water during rainy season will be pumped out from the quarries and will be tested before discharge to nearby cultivated field. Apart from this, there is no change on water environment.
2. There will be no wastewater generated from the mining operations. Only domestic waste water will be generated, which will be treated in septic tank/soak pits.

Surface Water & Ground Water Management:

1. Mining will intersect the ground water table during the plan period as per approved mining plan.
2. Khudijore is to be diverted for extracting coal by opencast during 5th year of opencast operation as per approved Mine Plan for which necessary clearance will be taken.

Air Pollution Control Measures:

1. The ambient air quality will be monitored at decided locations once in every six months. Monitoring will be carried out for Twenty-Four hours and sample collection will be as per the norms laid down by MoEF&CC.
2. Emission of dust due to movement of vehicles and blasting will produce impact on air, necessary mitigation will be followed to avoid emission.
3. Dust suppression measures like spraying / sprinkling of water to keep the surface wet will be carried out.

Noise Pollution Control Measures:

1. Proper maintenance of all machines will be carried out, which help in reducing the generation of noise during operations.

2. Noise generated by equipments is intermittent and does not cause much adverse impact.
3. Periodical monitoring of noise will be done to adopt corrective actions wherever needed.
4. Plantation will be taken up along the approach roads. The plantation minimizes propagation of noise and also arrests dust.

Topsoil Management:

4.45 Cu.m of Topsoil will be generated during opencast mining operations, After the final grading, the topsoil would be redistributed in a manner that achieves an approximate uniform stable thickness consistent with the post mining land uses, contours, and surface water drainage system.

The top soil obtained will be stored separately as Top soil dump and will be used in plantation activities of the mine.

Part of the soil will be used for tree plantation around the periphery of the external dump and all along the sides of surface haul road and approach road, and in and around the industrial and residential area. Biological reclamation work will follow in concurrent manner. In the final stage topsoil preserved will be spread over internal dump and plantation will be done over these solid wastes i.e., overburden.

Undertaking submitted affirming:

- a. Permission from concerned department along with action plan and design details for diversion of Khudia Jore nalla will be submitted with EIA/EMP report
- b. The safety zone around railway line will be maintained as per statutory regulations and as per directions of the concerned authorities. If any working/tunneling etc is required then statutory permission will be obtained from concerned authorities.
- c. Ground water table will be intersected for which necessary permission shall be obtained.
- d. Consumption of Explosive have been recalculated which is now 30 Kg/day forunder ground Mining operations and 8 Tonne /day for Opencast operations
- e. If any changes are noticed in future regarding the report issued by the ministry of coal, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- f. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- g. The plantation work will be completed as per the approved Mining Plan. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- h. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

- i. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- j. If tree felling is required permission from Competent authority will be obtained.

Baseline Result for the Air Monitoring Locations

Pollutant	Location Codes	Max.	Min.	Avg.	98 Percentile	NAAQS
PM10 ($\mu\text{g}/\text{m}^3$)	A-1	74.10	67.50	71.11	74.05	100
	A-2	49.90	43.60	46.67	49.90	
	A-3	65.30	56.90	59.85	65.30	
	A-4	56.20	48.80	52.63	55.95	
	A-5	60.20	51.20	54.48	59.85	
	A-6	83.30	76.60	79.33	83.25	
	A-7	79.70	71.80	75.77	79.45	
	A-8	69.70	62.60	66.31	69.60	
PM2.5 ($\mu\text{g}/\text{m}^3$)	A-1	46.40	38.30	42.54	46.30	60
	A-2	23.20	19.80	21.13	22.95	
	A-3	36.00	30.50	33.15	35.85	
	A-4	27.20	23.20	24.78	27.00	
	A-5	31.50	28.00	29.55	31.40	
	A-6	53.20	46.30	49.85	53.05	
	A-7	50.20	42.80	46.17	49.95	
	A-8	41.60	35.20	38.05	41.40	
NOX ($\mu\text{g}/\text{m}^3$)	A-1	28.00	23.70	26.07	27.95	80
	A-2	19.60	18.00	18.86	19.55	
	A-3	24.10	20.10	22.17	23.90	
	A-4	20.60	18.50	19.48	20.60	
	A-5	22.30	19.40	20.75	22.20	
	A-6	31.90	29.10	30.48	31.80	
	A-7	29.80	27.10	28.71	29.75	
	A-8	26.20	21.60	23.47	25.95	
SO2 ($\mu\text{g}/\text{m}^3$)	A-1	22.50	19.40	20.91	22.40	80
	A-2	15.20	14.10	14.77	15.20	
	A-3	18.60	16.30	17.49	18.50	
	A-4	15.80	14.70	15.37	15.80	
	A-5	16.50	15.10	15.78	16.50	
	A-6	25.70	22.80	24.64	25.70	
	A-7	24.30	21.20	22.58	24.25	
	A-8	20.30	17.60	19.21	20.25	
CO	A-1	0.79	0.74	0.77	0.79	2

Pollutant	Location Codes	Max.	Min.	Avg.	98 Percentile	NAAQS
(mg/m ³)	A-2	0.56	0.48	0.53	0.56	
	A-3	0.74	0.60	0.66	0.73	
	A-4	0.65	0.51	0.57	0.64	
	A-5	0.66	0.58	0.62	0.66	
	A-6	0.94	0.84	0.89	0.94	
	A-7	0.87	0.79	0.83	0.87	
	A-8	0.76	0.65	0.71	0.76	
O ₃ (µg/m ³)	A-1	19.85	8.59	14.07	19.78	180
	A-2	14.58	8.10	11.59	14.57	
	A-3	16.85	8.21	13.77	16.80	
	A-4	14.60	8.38	11.57	14.59	
	A-5	15.99	8.52	11.93	15.90	
	A-6	19.86	8.02	14.12	19.82	
	A-7	19.79	10.64	15.27	19.67	
	A-8	17.34	8.07	12.46	17.20	

Noise level data

Sr. No.	Locations	Avg. Day Time Noise Level Leq. dB(A)	Avg. Night Time Noise Level Leq. dB(A)
		Day Time (6:00 AM to 10:00 PM)	Night Time (10:00PM to 6:00 AM)
1.	Core Zone (Madhuban Village)	50.50	40.7
2.	Barrha Village	53.92	43.56
3.	Kanrra village near Mahuda Mor	52.31	42.55
4.	Lohpiti Village	52.20	41.92
5.	Dugda Village	53.15	43.62
6.	Matigarh Village BCCL colony	51.92	41.90
7.	Barora Area BCCL	51.11	40.81
8.	Nawgarh village	52.55	42.76
CPCB Noise Standards in dB(A) Leq			
Industrial Area		75	70
Commercial Area		65	55
Residential Area		55	45
Silence Zone		50	40

Ground Water Quality Data (October to December 2023)

S. No.	Parameter	Core Zone (Madhuban Village) (GW1)	Nawgarh village (GW2)	Ranidih Village (GW3)	Nutandih Village (GW4)	Lohpiti Village (GW5)	Dugda Village (GW6)	Sijua Basti (GW7)	Kanudih Village (GW8)	Panruabhitha Village (GW9)	Muraidih village (GW10)	Limits of IS:10500 -2012	
												Acceptable limit	Permissible limit in the Absence of Alternate Source
Physical Parameters													
1	pH (at 25 °C)	7.21	7.45	7.31	7.25	7.39	7.47	7.93	7.82	7.22	7.36	6.5 to 8.5	No Relaxation
2	Colour (Hazen)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(**LOQ-1.0)	5	15
3	Turbidity (NTU)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(* *LOQ-1.0)	*BLQ(**LOQ-1.0)	1	5
4	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Chemical Parameters													
6	Total Hardness as CaCO ₃ (mg/l)	252	228	242	244	262	275	278	262	280	269	200	600
7	Calcium as Ca (mg/l)	30.64	42.25	39.98	43.75	35.70	32.24	38.16	31.92	44.65	36.74	75	200
8	Alkalinity as CaCO ₃ (mg/l)	182.79	194.95	186.07	194.24	192.68	185.96	191.85	195.38	188.84	190.62	200	600
9	Chloride as Cl (mg/l)	42.52	51.48	54.38	48.65	41.98	47.37	44.95	41.85	48.34	45.52	250	1000
10	Cyanide as CN (mg/l)	*BLQ(* *LOQ-0.02)	*BLQ(**LOQ-0.02)	*BLQ(**LOQ-0.02)	*BLQ(**LOQ-0.02)	*BLQ(**LOQ-0.02)	*BLQ(**LOQ-0.02)	*BLQ(**LOQ-0.02)	*BLQ(**LOQ-0.02)	*BLQ(* *LOQ-0.02)	*BLQ(**LOQ-0.02)	0.05	No Relaxation
11	Magnesium as Mg (mg/l)	42.62	29.73	34.51	32.71	41.97	47.23	44.37	44.27	40.91	43.04	30	100
12	Total Dissolved Solids (mg/l)	344	337	318	328	381	342	329	315	378	366	500	2000
13	Sulphate as SO ₄ (mg/l)	23.13	24.89	27.90	28.47	25.62	21.35	20.49	22.84	25.63	23.04	200	400
14	Fluoride as F (mg/l)	0.21	0.24	0.26	0.22	0.27	0.24	0.26	0.20	0.21	0.23	1.0	1.5
15	Nitrate as NO ₃ (mg/l)	2.14	2.66	2.15	2.59	2.35	2.38	2.81	2.63	2.47	0.27	45	No Relaxation
16	Iron as Fe (mg/l)	0.51	0.42	0.46	0.48	0.55	0.49	0.58	0.61	0.53	0.45	1.0	No relaxation
17	Aluminium as Al (mg/l)	*BLQ(* *LOQ-0.005)	*BLQ(* *LOQ-0.005)	*BLQ(* *LOQ-0.005)	*BLQ(* *LOQ-0.005)	*BLQ(* *LOQ-0.005)	*BLQ(* *LOQ-0.005)	*BLQ(* *LOQ-0.005)	*BLQ(* *LOQ-0.005)	*BLQ(* *LOQ-0.005)	*BLQ(**LOQ-0.005)	0.03	0.2

S. No.	Parameter	Core Zone (Madhuban Village) (GW1)	Nawgarh village (GW2)	Ranidih Village (GW3)	Nutandih Village (GW4)	Lohpiti Village (GW5)	Dugda Village (GW6)	Sijua Basti (GW7)	Kanudih Village (GW8)	Panruabhitha Village (GW9)	Muraidih village (GW10)	Limits of IS:10500 -2012	
												Acceptable limit	Permissible limit in the Absence of Alternate Source
		0.005)	0.005)	0.005)	0.005)	0.005)	0.005)	0.005)	0.005)	0.005)			
18.	Boron (mg/l)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	0.5	1
19.	Chromium as Cr (mg/l)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	0.05	No Relaxation
20.	Phenolic Compounds (mg/l)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	0.001	0.002
21.	Mineral Oil (mg/l)	*BLQ (**L OQ-0.1)	*BLQ (**L OQ-0.1)	*BLQ (**L OQ-0.1)	*BLQ (**L OQ-0.1)	*BLQ (**L OQ-0.1)	*BLQ (**L OQ-0.1)	*BLQ (**L OQ-0.1)	*BLQ (**L OQ-0.1)	*BLQ (**L OQ-0.1)	*BLQ (**L OQ-0.1)	0.5	No Relaxation
22.	Anionic Detergents as MBAS (mg/l)	*BLQ (**L OQ-0.05)	*BLQ (**L OQ-0.05)	*BLQ (**L OQ-0.05)	*BLQ (**L OQ-0.05)	*BLQ (**L OQ-0.05)	*BLQ (**L OQ-0.05)	*BLQ (**L OQ-0.05)	*BLQ (**L OQ-0.05)	*BLQ (**L OQ-0.05)	*BLQ (**L OQ-0.05)	0.2	1.0
23.	Zinc as Zn (mg/l)	0.45	0.51	0.42	0.47	0.57	0.52	0.58	0.54	0.46	0.53	5	15
24.	Copper as Cu (mg/l)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	0.05	1.5
25.	Manganese as Mn (mg/l)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	*BLQ (**L OQ-0.01)	0.1	0.3
26.	Cadmium as Cd (mg/l)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	0.003	No Relaxation
27.	Lead as Pb (mg/l)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	*BLQ (**L OQ-0.002)	0.01	No Relaxation
28.	Selenium as Se (mg/l)	*BLQ (**L OQ-0.001)	*BLQ (**L OQ-0.001)	*BLQ (**L OQ-0.001)	*BLQ (**L OQ-0.001)	*BLQ (**L OQ-0.001)	*BLQ (**L OQ-0.001)	*BLQ (**L OQ-0.001)	*BLQ (**L OQ-0.001)	*BLQ (**L OQ-0.001)	*BLQ (**L OQ-0.001)	0.01	No Relaxation
29.	Arsenic as As (mg/l)	*BLQ (**L OQ-0.005)	*BLQ (**L OQ-0.005)	*BLQ (**L OQ-0.005)	*BLQ (**L OQ-0.005)	*BLQ (**L OQ-0.005)	*BLQ (**L OQ-0.005)	*BLQ (**L OQ-0.005)	*BLQ (**L OQ-0.005)	*BLQ (**L OQ-0.005)	*BLQ (**L OQ-0.005)	0.01	0.05
30.	Mercury as Hg (mg/l)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	*BLQ (**L OQ-0.0005)	0.001	No Relaxation

S. No.	Parameter	Core Zone (Madhuban Village) (GW1)	Nagarh Village (GW2)	Ranidih Village (GW3)	Nutandih Village (GW4)	Lohpiti Village (GW5)	Dugda Village (GW6)	Sijua Basti (GW7)	Kanudih Village (GW8)	Panruabhitha Village (GW9)	Muraidih Village (GW10)	Limits of IS:10500 -2012	
												Acceptable limit	Permissible limit in the Absence of Alternate Source
Microbiological Parameters													
31.	Total Coliform (MPN/100ml)	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	-	10.00
32.	E. Coli (MPN/100ml)	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

Surface Water Quality Data

S. No	Parameter	Test-Method	Unit	Result									
				SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10
1	pH (at 25 °C)	IS3025 (P-11)	--	7.55	7.41	7.51	7.26	7.45	7.92	7.84	7.73	7.62	7.43
2	Colour	IS3025 (P-4)	Hazen	23	20	21	19	23	18	20	21	16	18
3	Turbidity	IS3025 (P-10)	NTU	88	96	90	83	88	104	99	92	85	78
4	Odour	IS3025 (P-5)	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Total Hardness as CaCO ₃	IS3025 (P-21)	mg/l	347	305	404	424	362	409	359	376	406	405
6	Calcium as Ca	IS3025 (P-40)	mg/l	95.7	84.57	93.67	85.92	88.65	82.07	90.56	84.53	92.51	86.08
7	Alkalinity as CaCO ₃	IS3025 (P-23)	mg/l	258.21	237.45	224.32	242.38	250.11	232.13	247.42	234.71	213.28	230.97
8	Chloride as Cl	IS 3025 (P-32)	mg/l	107.94	110.89	100.92	115.24	118.34	126.27	109.96	96.19	98.63	93.28
9	Residual free Chlorine	IS 3025 (P-26)	mg/l	*BLQ(**LO Q-0.15)	*BLQ(**LO Q-0.15)	*BLQ(**LO Q-0.15)	*BLQ(**LO Q-0.15)	*BLQ(**LO Q-0.15)	*BLQ(**LO Q-0.15)	*BLQ(**LO Q-0.15)	*BLQ(**LO Q-0.15)	*BLQ(**LO Q-0.15)	*BLQ(**LO Q-0.15)
10	Cyanide as CN	IS 3025 (P-27)	mg/l	*BLQ(**LO Q-0.02)	*BLQ(**LO Q-0.02)	*BLQ(**LO Q-0.02)	*BLQ(**LO Q-0.02)	*BLQ(**LO Q-0.02)	*BLQ(**LO Q-0.02)	*BLQ(**LO Q-0.02)	*BLQ(**LO Q-0.02)	*BLQ(**LO Q-0.02)	*BLQ(**LO Q-0.02)

S. No	Parameter	Test-Method	Unit	Result									
				SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10
11	Magnesium as Mg	APHA, 3500 Mg B Calculation method	mg/l	26.18	44.6	41.26	50.83	34.11	49.52	32.22	40.01	42.45	46.12
12	Total Dissolved Solids	IS3025 (P-16)	mg/l	559	533	679	663	573	638	659	681	554	615
13	Total Suspended solids	IS 3025 (P-17)	mg/l	85	81	73	83	95	75	93	82	74	73
14	Dissolved Oxygen	IS 3025 (P-38)	mg/l	6.8	6.3	5.8	6.4	6	6.8	8.9	6.6	6.7	6.2
15	Sulphate as SO ₄	IS3025 (P 24)	mg/l	63.91	72.51	73.99	72.67	64.45	71.04	60.16	63.25	68.49	72.51
16	Fluoride as F	APHA, 4500-F B& D	mg/l	0.44	0.47	0.45	0.48	0.49	0.44	0.43	0.44	0.48	0.45
17	BOD (3 Days at 27°C)	IS 3025, P-44	mg/l	6.15	9.8	9.64	7.6	10.11	9.84	6.94	5.59	5.98	8.63
18	COD	APHA, 5220 B, Open Reflux Method	mg/l	20	18	27	25	18	20	21	18	19	23
19	Conductivity (at 25 °C)	IS3025 (P-14)	mS/cm	0.924	0.892	1.115	1.082	0.968	1.048	1.091	1.124	0.926	1.108
20	Nitrate as NO ₃	IS3025 (P-34)	mg/l	39.48	43	44.88	44.97	40.96	44.23	49.12	35.34	47.54	47.34
21	Sodium as Na	IS3025 (P-45)	mg/l	187	189	63	54	171	175	172	63	61	176
22	Potassium as K	IS3025 (P-45)	mg/l	12	12.35	35.04	38.87	43.82	13.5	12.43	34.53	2.56	11.5
23	Iron as Fe	VEL/STP /ICP/W-01, Issue date.-01, 01/11/21	mg/l	2.15	1.64	1.76	1.82	2.22	1.94	1.83	2.25	2.11	1.78
24	Aluminium as Al	VEL/STP /ICP/W-01, Issue date.-01, 01/11/21	mg/l	*BLQ(**LO Q-0.005)	*BLQ(**LO Q-0.005)	*BLQ(**LO Q-0.005)	*BLQ(**LO Q-0.005)	*BLQ(**LO Q-0.005)	*BLQ(**LO Q-0.005)	*BLQ(**LO Q-0.005)	*BLQ(**LO Q-0.005)	*BLQ(**LO Q-0.005)	*BLQ(**LO Q-0.005)

S. No	Parameter	Test-Method	Unit	Result									
				SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10
25	Boron	VEL/STP/ICP/W-01, Issue date.-01, 01/11/21	mg/l	0.93	0.95	0.82	0.89	0.61	0.75	0.63	0.74	0.84	0.55
26	Chromium as Cr	VEL/STP/ICP/W-01, Issue date.-01, 01/11/21	mg/l	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)
27	Phenolic Compounds	IS3025 (P-43)	mg/l	*BLQ(**LO Q-0.0005)	*BLQ(**LO Q-0.0005)	*BLQ(**LO Q-0.0005)	*BLQ(**LO Q-0.0005)	*BLQ(**LO Q-0.0005)	*BLQ(**LO Q-0.0005)	*BLQ(**LO Q-0.0005)	*BLQ(**LO Q-0.0005)	*BLQ(**LO Q-0.0005)	*BLQ(**LO Q-0.0005)
28	Mineral Oil	IS 3025 (P-39)	mg/l	*BLQ(**LO Q-0.1)	*BLQ(**LO Q-0.1)	*BLQ(**LO Q-0.1)	*BLQ(**LO Q-0.1)	*BLQ(**LO Q-0.1)	*BLQ(**LO Q-0.1)	*BLQ(**LO Q-0.1)	*BLQ(**LO Q-0.1)	*BLQ(**LO Q-0.1)	*BLQ(**LO Q-0.1)
29	Anionic Detergents as MBAS	VEL/STP/ICP/W-01, Issue date.-01, 01/11/21	mg/l	*BLQ(**LO Q-0.05)	*BLQ(**LO Q-0.05)	*BLQ(**LO Q-0.05)	*BLQ(**LO Q-0.05)	*BLQ(**LO Q-0.05)	*BLQ(**LO Q-0.05)	*BLQ(**LO Q-0.05)	*BLQ(**LO Q-0.05)	*BLQ(**LO Q-0.05)	*BLQ(**LO Q-0.05)
30	Zinc as Zn	VEL/STP/ICP/W-01, Issue date.-01, 01/11/21	mg/l	1.77	2.18	1.86	2.25	1.94	1.76	2.14	2.29	2.15	1.59
31	Copper as Cu	VEL/STP/ICP/W-01, Issue date.-01, 01/11/21	mg/l	0.57	0.61	0.39	0.69	0.49	0.35	0.72	0.32	0.42	0.57
32	Manganese as Mn	VEL/STP/ICP/W-01, Issue date.-01, 01/11/21	mg/l	*BLQ(**LO Q-0.01)	*BLQ(**LO Q-0.01)	*BLQ(**LO Q-0.01)	*BLQ(**LO Q-0.01)	*BLQ(**LO Q-0.01)	*BLQ(**LO Q-0.01)	*BLQ(**LO Q-0.01)	*BLQ(**LO Q-0.01)	*BLQ(**LO Q-0.01)	*BLQ(**LO Q-0.01)

S. No	Parameter	Test-Method	Unit	Result									
				SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10
		01/11/21											
33	Cadmium as Cd	VEL/STP/ICP/W-01, Issue date.-01, 01/11/21	mg/l	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)	*BLQ(**LO Q-0.002)
34	Total Coliform	APHA 23 rd edition, 9221 B	MPN/100ml	580	630	1100	1300	1100	1100	1400	1300	840	1100
35	Fecal Coliform	APHA 23 rd edition, 9221 E	MPN/100ml	390	460	700	700	630	580	840	580	430	840

Physico- Chemical Properties of Soil (October to December 23)

		S-01	S-02	S-03	S-04	S-05	S-06	S-07	S-08	S-09	S-10
S.No.	Parameter	Core Zone (Madhuban Village)	Near Kharkaree village	Forest area near Ranidih	Near Pathargadia village	Near Modidih or Koradiah village	Near Lohpiti Village	Near Dugda Village	Near Kanudih Bridge	Near Panrubaitha Village	Near Muraidih Village
1.	pH (at 25 °C)	7.38	7.62	7.84	7.61	7.52	7.75	7.42	7.65	7.92	7.67
2.	Conductivity (mS/cm)	0.358	0.469	0.378	0.437	0.513	0.587	0.478	0.545	0.418	0.397
3.	Soil Texture	Sand-45	Sand-44	Sand-39	Sand-40	Sand-39	Sand-42	Sand-44	Sand-40	Sand-41	Sand-42
		Silt-42	Silt-37	Silt-39	Silt-36	Silt-40	Silt-45	Silt-37	Silt-39	Silt-35	Silt-43
		Clay-13	Clay-19	Clay-22	Clay-24	Clay-21	Clay-13	Clay-19	Clay-21	Clay-24	Clay-15
4.	Color	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown

5.	Water holding capacity (%)	31.2	34.1	39.6	36.8	38.9	35.4	34.2	37.6	36.9	36.6
6.	Bulk density (gm/cc)	1.48	1.38	1.40	1.33	1.45	1.37	1.42	1.32	1.39	1.41
7.	Chloride as Cl (mg/kg)	20.68	22.44	21.60	18.49	23.04	22.73	22.42	23.82	19.43	20.51
8.	Calcium as Ca (mg/kg)	32.38	35.17	33.11	36.69	34.98	32.68	28.93	34.49	36.88	33.12
9.	Sodium as Na (mg/kg)	42.11	46.52	41.11	43.65	41.76	45.34	41.62	45.63	44.29	40.56
10.	Potassium as K (kg/ha.)	174.08	179.04	188.26	186.49	170.5	175.07	189.42	174.52	171.58	180.66
11.	Organic Matter (%)	0.46	0.49	0.44	0.42	0.51	0.53	0.55	0.58	0.54	0.46
12.	Magnesium as Mg (mg/kg)	14.58	13.97	12.87	13.45	14.12	14.85	15.56	13.66	15.72	14.11
13.	Available Nitrogen as N (kg/ha.)	161.79	153.82	159.75	151.92	161.10	163.69	165.88	159.65	164.62	162.65
14.	Available Phosphorus (kg/ha.)	18.05	19.49	16.26	18.33	17.43	18.27	15.66	19.72	15.82	16.49
15.	Zinc as Zn (mg/kg)	7.46	1.88	1.24	11.14	6.94	7.64	11.35	10.77	4.99	9.13
16.	Manganese as Mn (mg/kg)	3.67	3.31	8.42	3.33	4.01	3.66	3.82	3.99	3.32	3.89
17.	Chromium as Cr (mg/kg)	0.86	0.97	0.82	0.76	1.01	0.77	0.84	0.92	0.78	0.85
18.	Lead as Pb (mg/kg)	1.77	1.75	1.71	1.84	0.74	1.84	0.88	1.73	0.76	0.78
19.	Cadmium as Cd (mg/kg)	*BLQ (**LOQ -0.5)	*BLQ (**LOQ -0.5)	*BLQ (**LOQ -0.5)	*BLQ (**LOQ -0.5)	*BLQ (**LOQ -0.5)	*BLQ (**LOQ -0.5)	*BLQ (**LOQ -0.5)	*BLQ (**LOQ -0.5)	*BLQ (**LOQ -0.5)	*BLQ (**LOQ -0.5)

20.	Copper as Cu (mg/kg)	1.32	2.04	1.78	2.26	1.75	2.15	1.42	2.19	1.89	2.41

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 09, 10, 11, 12 & 13.09.2025, the Committee recommends for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study for Open Cast and Underground Mining as mentioned in Annexure II alongwith following specific condition :-

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. This project is a part of cluster EC vide F.No. J-11015/100/2011-IA.II(M), dated 16.12.2013. Hence, the PAs are required to Delineate Madhuband Colliery from the above cluster EC before submitting the final EIA / EMP to SEAC for consideration of EC.
- III. Permission for diversion of existing seasonal Nala is to be obtained from the competent authority and process of diversion is to be completed before operation of mining acitivity.
- IV. The safety zone around railway line will be maintained as per statutory regulations.

2. **Proposed Integrated Municipal Solid Waste Management Facility of M/s Shree Shyam SWM Simdega Private Limited, Village : Tapudega Pandripani, Distt.: Simdega, Jharkhand (2.32 Ha).**

(Proposal no.: SIA/JH/INFRA2/471667 /2024)

The PAs vide letter dated 10.09.2025 have requested for deferment of the consideration of the proposal to the next meeting of SEAC.

Hence, the proposal will be taken up for consideration in the next meeting.

3. Jamdah Brick Soil Mining of M/s Deep Bricks (Partner : Shri Madan Munda), Village : Jamdah, Thana : Kharsawan, Thana no. : 09, Distt. : Saraikela-Kharsawan, Jharkhand (1.29 Ha).

(Proposal no.: SIA/JH/MIN/ 548884 /2025)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 10.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 1,200Cum Per Annum (6,00,000 Bricks per annum).

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Jamdah Brick Soil Mining by M/s Deep Bricks
2	Partners	: Shri Madan Munda& Sri Mahesh Yogi
3	Lease Address	: Village- Jamdah, Thana no. 09, Thana- Kharsawan, District- Saraikela - Kharsawan, Jharkhand
4	Lease Area	: Acres: 3.20 Ha: 1.29
5	Cluster Details	: Total ML area (in Ha) of the cluster: (2.45 + 3.20 acres = 5.65 acre or 2.28 ha) No. of Mines falling in the cluster: 2
6	Type of Land	: Ralyati Land (Non-forest Land)
7	Project Cost	: 13.70 Lakhs
8	EMP Budget	: Capital:10.60Lakhs Recurring: 2.5Lakhs / year
9	New or Expansion	: New
10	Mineable Reserves	: 13,429Cum
11	Mine Life	: 11 Years
12	Man power	: 10 persons
13	Water Requirement	: Total water requirement is about 4.41 including drinking (0.15 KLD) & sprinkling and for greenbelt (4.26 KLD).
14	Water Source	: The drinking water will be available from nearby village by tractor tank manually by labors at the site.
15	DG Set / power	: -
16	Crusher	: -
17	Nearest Water Body	: Bandi Dam is about 100mtr in NW direction. Kulachaki Nala 80mtr in northern direction.
18	Nearest Habitation	: Jamdah village is about 0.41 km in NW direction.(EMP Submitted)
19	Nearest Rail Station	: Rajkharsawan Junction is approx. 14.41 km in SSE direction.
20	Nearest Airport	: Jamshedpur Airport is about 41.98 km in E Direction,

21	Nearest Forest	:	NA
22	Road & Highways	:	Kharsawan Kuchai Dalbhanga Road is 2.34 km in WSW direction.
23	Approach road	:	Approach road is 500 m in south direction.

CO-ORDINATES

Toposheet No. 73F/13					
S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	22°51'15.86"N	84°45'25.83"E	7	22°51'20.53"N	84°45'24.76"E
2	22°51'14.44"N	84°45'24.92"E	8	22°51'20.14"N	84°45'25.84"E
3	22°51'15.11"N	84°45'23.03"E	9	22°51'20.14"N	84°45'27.40"E
4	22°51'16.96"N	84°45'23.45"E	10	22°51'19.72"N	84°45'27.90"E
5	22°51'18.79"N	84°45'24.23"E	11	22°51'18.69"N	84°45'26.48"E
6	22°51'20.24"N	84°45'24.27"E	12	22°51'17.95"N	84°45'26.17"E

LAND DETAILS

Khata no.	Plot no.
64	356

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made. Only made for 05 years, however life of mine is 11 years.
2	CO	:	The CO, Kuchai vide letter no. 238, dated 10.03.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar.
3	DMO Cluster	:	DMO, Saraikella-Kharsawan vide letter no. 385/M, dated 27.03.2025 certified that 01 other mining lease area (2.45 Acre) exists within 500 meters radius from proposed project site and total area is 5.65 Acre.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 434, dated 19.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Saraikella Forest Division vide letter no. 604, dated 25.02.2025 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Saraikella-Kharsawan has been certified vide memo no. 1155/M, dated 08.09.2025 that this project is mentioned in approved DSR of Saraikella-Kharsawan District as a potential

			village (Page no. 06, Sl. No. 367).
7	Gram Sabha	:	Gram Sabha conducted on 04.12.2024.
8	Mine Plan Approval	:	Approved by DMO, Saraikella-Kharsawan vide Letter No. 716/Khanan, dated 22.05.2025.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	OCM & Manual
2	Quarry Area	:	1.92 Acres / 0.78Ha
			Life of Mine – 11 years (Lease agreement: Five Years)
3	Waste Generation	:	No mine waste generation
4	Stripping Ratio(t/m ³)	:	00:00
5	Working Days	:	200
6	Benches: size & No	:	--
7	Highest Elevation of lease Area	:	264m AMSL
8	Lowest Elevation of lease Area	:	262m AMSL
9	Ultimate Working Depth	:	260m AMSL
10	Water Table	:	242m AMSL (20 M BGL)
11	Topography of Mine	:	Uneven surface
12	Explosive Requirement	:	--
13	Diesel/Fuel requirement	:	--

PRODUCTION DETAILS

Year	Production of Clay in Cum	Nos. of Bricks in Lakhs
1st	1200	6.0
2nd	1200	6.0
3rd	1200	6.0
4th	1200	6.0
5th	1200	6.0
Total	6000	30.0

LAND USE

Sr. No.	Pattern of Utilization	Present/ Existing Land use pattern in (ha)	Proposed Land use for first to fifth years (ha)	Land used at the conceptual stage, (ha)
1	Mining Activities	0.00	0.34	0.78
2	Safety Zone 2m & Safety Barrier around the Nala	0.00	0.51	0.51
3	Top Soil Dump	0.00	0.05	0.00

			(area used under quarry)	
4	Unutilized	1.29	0.39 (area used under quarry)	0.00
	Total	1.29	1.29	1.29

ENVIRONMENT MANAGEMENT

Green Belt Development

- In accordance with Office Memorandum No. F.No. IA3-22/3/2024-IA.III (E-241594), dated 24.07.2024, issued by the Ministry of Environment, Forest and Climate Change (MoEF&CC), out of the total 1050 trees proposed to be planted in the designated green belt area—both within and outside the lease boundary—10% (approximately 105 saplings) shall be earmarked under the national tree plantation campaign "Ek Ped Ma Ke Naam."

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Approach Road	2.5 x 2.5	800	500 M Approach Road $500/2.5=200$ $200 \times 4 \text{ rows} = 800 \text{ Plants}$	500mtr	Pipal Bargad Palash Fruit Bearing Trees Mango, Jackfruit Guava, Jamun
	Along the Nala and villages road Safety		250	5200	0.52	
	Compensatory Plantation (in accordance to Gram panchayat)	2.5 x 2.5	70	1 tree fell = 10 trees planted		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1120		0.52	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development,

Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO	Mitigative measures to protect Environment	Capital Cost (In Lakhs)	Recurring cost (In Lakhs)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	5.0	1.0
02.	Green belt development safety zone, along the road (for each plant including hedges and fences)& Compensatory plantation @ No. of plants 1120 x 500 Rs.	5.60	0.5
03.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Nil	1.0
TOTAL		10.60	2.5

Endangered species of flora, fauna & Schedule-I

Based on the preliminary study conducted during the baseline data generation phase, along with consultations with local residents and relevant authorities, no endangered species of flora or fauna, including those listed under Schedule-I of the Wildlife (Protection) Act, 1972, were observed within the designated 10 km study area.

Environment Monitoring programme

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring	Responsibility
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly	Proponent/Third Party
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly	Proponent/Third Party
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly	Proponent/Third Party
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly	Proponent

Solid Waste Management

There is no generation of waste.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2 m above Ground Water Table (GWT). No mining will be done below GWT.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on kaccharoad shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

Transportation of brick along the public road may cause accident which may cause injury.

Preventive Measures:

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Drilling Operations

No drilling is involved in this mining.

Blasting Operations

No drilling is involved in this mining.

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75-90 (A) measured at distance of 3m from the source.

Health Hazards

During digging and handling of soil i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers/Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Jamdah Brick Soil Mining of M/s Deep Bricks (Partner : Shri Madan Munda), Village : Jamdah, Thana : Kharsawan, Thana no. : 09, Distt. : Saraikela-Kharsawan, Jharkhand (1.29 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged

photographs.

- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

4. Haribhanja Brick Soil Mining of M/s Singhdeo Bricks (Prop. : Shri Naba Kishor Singhdeo), Village : Haribhanja, Thana : Kharsawan, Thana no. : 149, Distt. : Saraikela-Kharsawan, Jharkhand (0.86 Ha).

(Proposal no.: SIA/JH/MIN/ 549782 /2025)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 10.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 1,200Cum Per Annum (6,00,000 Bricks per annum)

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Haribhanja Brick Soil Mining by M/s Singhdeo Bricks
2	Proprietor	: Naba Kishor Singhdeo S/o Shri Ishwari Prasad Singhdeo
3	Lease Address	: Village –Haribhanja, Thana No- 149, Thana Kharsawan, District- SaraikelaKharsawan, Jharkhand

4	Lease Area	:	Acres: 2.12	Ha: 0.86
5	Cluster Details	:	NA	
6	Type of Land	:	Raiyati Land (Non-forest Land)	
7	Project Cost	:	11.0 Lakhs	
8	EMP Budget	:	Capital:19.88Lakhs	Recurring: 5.1Lakhs / year
9	New or Expansion	:	New	
10	Mineable Reserves	:	11,089 Cum	
11	Mine Life	:	09 Years	
12	Man power	:	10 persons	
13	Water Requirement	:	Total water requirement is about 3.98 including drinking (0.15 KLD) & sprinkling and for greenbelt (3.838 KLD).	
14	Water Source	:	The drinking water will be available from nearby village by tractor tank manually by labors at the site.	
15	DG Set / power	:	-	
16	Crusher	:	-	
17	Nearest Water Body	:	Patahatu Pond -Haribhanjais about 0.33 km in S direction. Seasonal Nala 270mtr Northern direction	
18	Nearest Habitation	:	Haribhanja village is about 0.11 km in NE direction.	
19	Nearest Rail Station	:	Mahalimurup Railway Station is approx 8.06 km in South-East direction.	
20	Nearest Airport	:	Jamshedpur Airport is about 34.16 km in East Direction	
21	Nearest Forest	:	NA	
22	Road & Highways	:	Ukri to Pandrasali Rd is 2.13 KM in SEE direction. KharsawankuchaiDalbhanga Road is 3.15 in ESE direction.	
23	Approach road	:	Approach Road is 500Mtr in S direction.	

CO-ORDINATES

Point	Latitude	Longitude	Point	Latitude	Longitude
1	22°48'47.24" N	85°49'45.21" E	9	22°48'49.91" N	85°49'39.49" E
2	22°48'48.05" N	85°49'41.68" E	10	22°48'49.38" N	85°49'40.74" E
3	22°48'47.98" N	85°49'41.52" E	11	22°48'49.73" N	85°49'42.01" E
4	22°48'49.14" N	85°49'37.49" E	12	22°48'49.02" N	85°49'42.01" E
5	22°48'50.64" N	85°49'37.75" E	13	22°48'48.82" N	85°49'42.54" E
6	22°48'50.46" N	85°49'38.57" E	14	22°48'48.53" N	85°49'42.58" E
7	22°48'50.15" N	85°49'38.83" E	15	22°48'47.83" N	85°49'45.47" E
8	22°48'50.13" N	85°49'39.24" E			

LAND DETAILS

Khata no.	Plot no.
369	301, 305 & 969

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Kharsawan vide letter no. 927, dated 29.08.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	:	DMO, Saraikella-Kharsawan vide letter no. 771/M, dated 29.05.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 5114, dated 26.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Saraikella Forest Division vide letter no. 2108, dated 09.11.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Saraikella-Kharsawan has been certified vide memo no. 1154/M, dated 08.09.2025 that this project is mentioned in approved DSR of Saraikella-Kharsawan District as a potential village (Page no. 08, Sl. No. 433).
7	Gram Sabha	:	Gram Sabha conducted on 07.06.2023.
8	Mine Plan Approval	:	Approved by DMO, Saraikella-Kharsawan vide Letter No. 491/Khanan, dated 18.04.2025.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	OCM & Manual
2	Quarry Area	:	1.55Acres / 0.63Ha Life of Mine – 09 years
3	Waste Generation	:	No mine waste generation
4	Stripping Ratio(t/m ³)	:	-
5	Working Days	:	200
6	Benches: size & No	:	--
7	Highest Elevation of lease Area	:	209 m AMSL
8	Lowest Elevation of lease Area	:	208 m AMSL
9	Ultimate Working Depth	:	206m AMSL
10	Water Table	:	188m AMSL (20 M BGL)
11	Topography of Mine	:	Uneven area
12	Explosive Requirement	:	--

13	Diesel/Fuel requirement	:	--

PRODUCTION DETAILS

Year	Production of Clay in Cum	Nos. of Bricks in Lakhs
1st	1200	6.0
2nd	1200	6.0
3rd	1200	6.0
4th	1200	6.0
5th	1200	6.0
Total	6000	30.0

LAND USE

Sl.No.	Pattern of Utilization	Present/Existing Land use for current plan period (ha)	Proposed land use for First to Fifth year (ha)	Land Used at the conceptual stage (ha)
1	Mining Activities	0.00	0.34	0.63 (area used for cultivation)
2	Safety Zone (2m)/(Berm Area)	0.00	0.11	0.11
3	Top Soil Dump	0.00	0.04 (Area used under quarry)	0.00
4	Unutilized	0.86	0.37 (Area used under quarry)	0.12 Unused area near road side
	Total	0.86	0.86	0.86

ENVIRONMENT MANAGEMENT

Green Belt Development

- In accordance with Office Memorandum No. F.No. IA3-22/3/2024-IA.III (E-241594), dated 24.07.2024, issued by the Ministry of Environment, Forest and Climate Change (MoEF&CC), out of the total 976 trees proposed to be planted in the designated green belt area—both within and outside the lease boundary—10% (approximately 100 saplings) shall be earmarked under the national tree plantation campaign "Ek Ped Ma Ke Naam."

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone/Berm area	2.5 x 2.5	176	1,100	0.11	Along the Rd. fruit

	Approach Road	2.5 x 2.5	800	500m Approach Road 500/2.5=200 200 x 4row = 800Plant	500mtr	bearing trees Mango, Jackfruit, Guava,
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			976		0.11	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO	Mitigative measures to protect Environment	Capital Cost (In Lakh)	Recurring cost (In Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	15.0	2.5
02.	Green belt development in safety zone & along the road (for each plants including hedges and fences) @ No. of plants 976 x 500 Rs.	4.88	1.6
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	1.0
TOTAL		19.88	5.1

Endangered species of flora, fauna & Schedule-I

Based on the preliminary study conducted during the baseline data generation phase, along with consultations with local residents and relevant authorities, no endangered species of flora or fauna, including those listed under Schedule-I of the Wildlife (Protection) Act, 1972, were observed within the designated 10 km study area..

Environment Monitoring programme

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring	Responsibility

1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly	Proponent/Third Party
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly	Proponent/Third Party
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly	Proponent/Third Party
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly	Proponent

Solid Waste Management

There is no generation of waste.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2 m above Ground Water Table (GWT). No mining will be done below GWT.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on kaccharoad shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

Transportation of brick along the public road may cause accident which may cause injury.

Preventive Measures:

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Drilling Operations

No drilling is involved in this mining.

Blasting Operations

No drilling is involved in this mining.

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75-90 (A) measured at distance of 3m from the source.

Health Hazards

During digging and handling of soil i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers/Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace(e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from

the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard.
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Haribhanja Brick Soil Mining of M/s Singhdeo Bricks (Prop. : Shri Naba Kishor Singhdeo), Village : Haribhanja, Thana : Kharsawan, Thana no. : 149, Distt. : Saraikela-Kharsawan, Jharkhand (0.86 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

5. Chaparna Stone Deposit of M/s Sri Sai Minerals (Partner : Shri Shyam Jaiswal & Others), Village : Chaparna, P.S. : Lesliganj, Anchal : Satbarwa, Thana no. : 285, Distt.: Palamau, Jharkhand (1.602 Ha).

(Proposal no.: SIA/JH/MIN/548466 /2025)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 10.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 52,250 Cum Per Annum or 1,41,075 Ton Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Chaparna Stone Deposit by M/s Sri Sai Minerals.
2	Partners	: Shri Shyam Jaiswal, Sri Shubham Agarwal, Sri Nitin Gupta, & Sri Ramashish Singh
3	Lease Address	: Mauza- Chaparna, Thana- Lesliganj, Anchal- Satbarwa, District- Palamu, Jharkhand.
4	Lease Area	: Acres: 3.96 Ha: 1.602
5	Cluster Details	: Total ML area (in Ha) of the cluster : (2.90 + 3.96 acres = 6.86 acres; 2.77 ha) No. of Mines falling in the cluster : 2
6	Type of Land	: Raiyati Land
7	Project Cost	: 43.00 (in Lakhs)
8	EMP Budget	: Capital: 26.03 Lakhs Recurring: 9 Lakhs / year
9	New or Expansion	: New
10	Mineable Reserves	: 3,17,310 Cum 8,56,736 Tonnes
11	Mine Life	: 6 Years
12	Man power	: 20 persons
13	Water Requirement	: Total water requirement is about 10.70 including drinking (0.70 KLD) & sprinkling (8 KLD) and for greenbelt (2.0 KLD).
14	Water Source	: By Authorized hired water tankers.
15	DG Set / power	: 25 KVA (Temporary setup for Backup).
16	Crusher	: No
17	Nearest Water Body	: Seasonal Nala is about 355m in West direction.
18	Nearest Habitation	: Chaparna Habitation is about 105 m in SE direction (EMP Submitted)
19	Nearest Rail Station	: Kechki Railway station is about 13.26 km in WSW direction.
20	Nearest Airport	: Gaya Airport is about 109 km in NE direction.
21	Nearest Forest	: Forest Distance Direction
		Kundri R.F. 9.64 N
		Hurlaung R.F. 10.2 NE
		Kundelwa P.F. 9.81 NW
		Purnadih P.F. 13.57 WNW

22	Road & Highways	:	NH - 39 Highway is about 4.39 km in WSW direction.
23	Approach Road	:	Approach Road is approx. 565 m in ESE direction

CO-ORDINATES

Toposheet: 73A/5					
PILLARS	LATITUDE	LONGITUDE	PILLARS	LATITUDE	LONGITUDE
1	23°58'11.536"N	84°16'16.479"E	10	23°58'12.353"N	84°16'8.305"E
2	23°58'11.896"N	84°16'15.374"E	11	23°58'14.251"N	84°16'8.660"E
3	23°58'10.360"N	84°16'14.701"E	12	23°58'15.297"N	84°16'9.256"E
4	23°58'10.711"N	84°16'13.692"E	13	23°58'14.693"N	84°16'10.972"E
5	23°58'11.466"N	84°16'14.021"E	14	23°58'13.980"N	84°16'12.657"E
6	23°58'11.849"N	84°16'12.820"E	15	23°58'13.306"N	84°16'14.546"E
7	23°58'12.203"N	84°16'11.761"E	16	23°58'12.778"N	84°16'16.017"E
8	23°58'11.474"N	84°16'11.451"E	17	23°58'12.507"N	84°16'16.964"E
9	23°58'11.952"N	84°16'9.995"E			

LAND DETAILS

Khata no.	Plot no.
32	192
39	190

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (Loi) has been issued by DMO, Palamau, Medininagar vide letter no. 1339/M, dated 24.05.2025.
2	CO	:	The CO, Satbarwa, Palamau vide letter no. 204, dated 05.04.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar and also mentioned that the habitation of 5 Kacha houses at a distance of 105 meters, 15-16 Kacha & Pacca Houses at a distance of 250 meters and Barsati Nadi at a distance of 355 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO Cluster	:	DMO, Palamau, Medininagar vide memo no. 1584/M, dated 11.06.2025 certified that 01 other mining lease area (2.90 Acre) exists within 500 m radius from proposed project site and total area is 6.86 Acre (2.77 Ha).
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 466, dated 21.07.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.

5	DFO Territorial	:	Divisional Forest Officer, Medininagar Forest Division vide letter no. 2098, dated 11.07.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project boundary.
6	DSR	:	The DMO, Palamau, Medininagar has been certified vide memo no. 2084/M, dated 23.08.2025 that this project is mentioned in approved DSR of Palamau District as a potential village (Page no. 143).
7	Gram Sabha	:	BDO, Satbarwa, Palamau vide letter no. 274, dated 27.03.2025 informed that Gram Sabha conducted on 12.03.2025.
8	Mine Plan Approval	:	Mine plan approved by Assistant Director, Geology, District Geological Officer, Palamau, Jharkhand vide memo no. 115, dated 06.08.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra through letter dated 10.09.2025 affirmed that the mining plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	OCM &Semi-Mechanised	
2	Quarry Area	:	2.79 Acre / 1.131 Ha	Life of Mine – 6 years
3	Waste Generation	:	5 years–71,300 Cum	
4	Stripping Ratio(t/m ³)	:	1:0.03	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	305 m ASML	
8	Lowest Elevation of lease Area	:	300 m ASML	
9	Ultimate Working Depth	:	265 m ASML	
10	Water Table	:	250 m ASML (50m BGL)	
11	Topography of Mine	:	Small hillocks	
12	Explosive Requirement	:	42.53 Say 43 Kg/Day (External Agency)	
13	Diesel/Fuel requirement	:	292 Litres per day	

PRODUCTION DETAILS

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in Cum	Intercalated waste in Cum	Total Waste in Cum
1st Year	47795	129045	25740	2516	28256
2nd Year	48906	132046	0	2574	2574
3rd Year	49970	134919	32400	2630	35030
4th Year	51110	137997	0	2690	2690
5th Year	52250	141075	0	2750	2750
Total	250031	675082	58140	13160	71300

LAND USE

LAND USE PATTERN			
Land Utilization	Existing Land Use (Ha)	At the end of Plan Period (Ha)	At Conceptual Period (Ha)
Excavation	0.0	1.129 (0.135 ha area shall be reclaimed)	1.131 (0.187 ha area shall be reclaimed and used for plantation), 0.944 ha converted in to water reservoir)
Waste Dump	0.00	0.0 (Comes under Quarry)	0.00
Road	0.00	0.02 (Comes under Quarry)	0.0
Infrastructure (Crusher)	0.0	0.00	0.00
Safety Zone Plantation	0.0	0.471	0.471
Total area in use	0.00	1.602	1.602
Balance unused area	1.602	0.00	0.00
Total Applied Lease Area	1.602		

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	754	4710	0.471	Pipal Bargad Palash Fruit Bearing Trees Mango, Jackfruit, Guava, Jamun
	Haul Road	3.0 x 3.0	752	565 M Approach Road 565/3=188 188 x 4 row = 752 Plants	565 m	
	Reclaimed area/ Backfilled area	2.5 x 2.5	300	1870	0.187	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1,806	6,580	0.658	

- In accordance with Office Memorandum No. F.No. IA3-22/3/2024-IA.III (E-241594), dated 24.07.2024, issued by the Ministry of Environment, Forest and Climate Change (MoEF&CC), out of the total 1806 trees proposed to be planted in the designated green belt area—both within and outside the lease boundary—10% (approximately 181 saplings) shall be earmarked under the national tree plantation campaign "Ek Ped Ma Ke Naam."
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable

species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO	Mitigative measures to protect Environment	Capital Cost (n Lakhs)	Recurring cost (In Lakhs)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	15.0	2.5
02.	Green belt development safety zone 7.5mtr, reclaimed or backfilled area and along the road (for each plant including hedges and fences) @ No. of plants 1806 x 500Rs.	9.03	5.0
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	1.0
04.	Settling Tank & Garland Drain	2.0	0.5
TOTAL		26.03	9.0

Additional Blasting cost

Blasting			
1	Training and Awareness of personnel during Blasting operations	50,000	0
2	Provision of safe distance from the Project site for the settlements		
	• Blasting shelters and Sirens	50,000	5,000
	• Portable Drop Arm Barrier	2,00,000	10,000
Total cost		3,00,000	15,000

Endangered species of flora, fauna & Schedule-I

Based on the preliminary study conducted during the baseline data generation phase, along with consultations with local residents and relevant authorities, no endangered species of flora or fauna, including those listed under Schedule-I of the Wildlife (Protection) Act, 1972, were observed within the designated 10 km study area.

Solid Waste Management

During the plan period, about 71,300 m³ of overburden and intercalated waste will be generated. The stone deposit is overlain by a 3 m thick gritty soil, considered as overburden. With a 95% stone recovery, only 5% intercalated waste is expected. Of the total waste, 50% (~35,650 m³ in-situ) will be used for approach and haul road maintenance. The remaining 50% (~35,650 m³ in-situ; 44,562 m³ loose; 37,878 m³ compact) will be temporarily dumped at the western part of the lease area up to the 2nd year. From the 3rd to 5th year, this

material along with fresh waste will be used for backfilling the exhausted quarry (0.135 ha in the southeast). Backfilling will restore the surface level, followed by plantation over the reclaimed area.

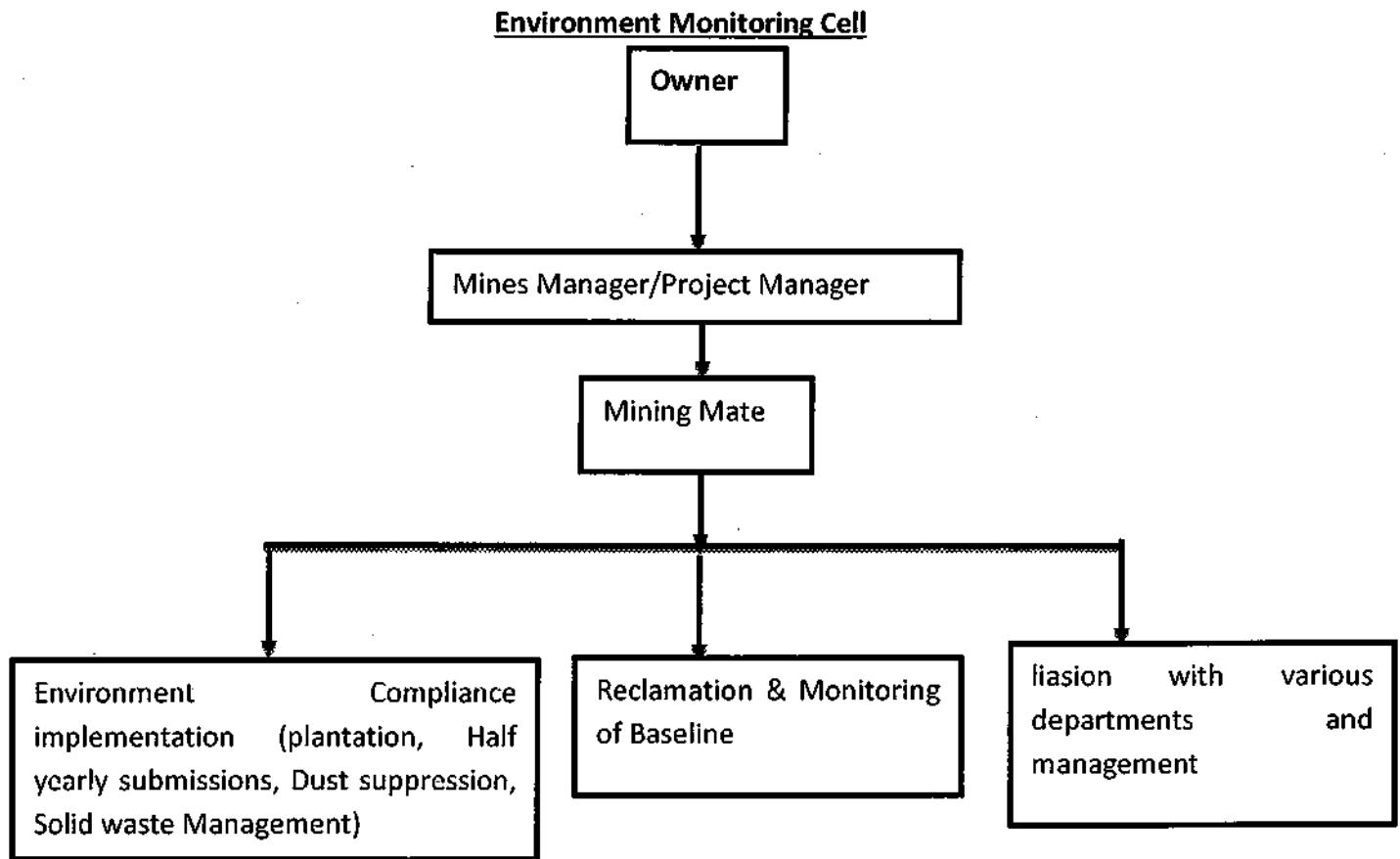


Fig: Organization Chart for Environment Management Cell

Responsibility of Environment Management cell

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to

Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench

- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

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The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from, the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/ loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of

Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chaparna Stone Deposit of M/s Sri Sai Minerals (Partner : Shri Shyam Jaiswal & Others), Village : Chaparna, P.S. : Lesliganj, Anchal : Satbarwa, Thana no. : 285, Distt.: Palamau, Jharkhand (1.602 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

6. Ghujwa Stone Mine of M/s Jai Bajrang Minerals (Partner : Shri Pradeep Kumar & Others), Village : Ghujwa, Thana : Naudiha Bazar, Thana no. : 386, Distt.: Palamau, Jharkhand (2.023 Ha).

(Proposal no.: SIA/JH/MIN/548367 /2025)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 10.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 58,410 Cum Per Annum or 1,57,707 Ton Per Annum

Project and Location Details:

S. No	Parameter	Details	
1	Project Name	: Ghujwa Stone Mine by Jai Bajrang Minerals.	
2	Partners	: Sri Pradeep Singh, Sri Shani Gupta, Sri Anup Kumar, Sri Rakesh Kr. Singh & Sri Upendra Kr. Singh	
3	Lease Address	: Mauza- Ghujwa, Thana No.-386, Thana- Naudiha Bazar, District- Palamu, Jharkhand	
4	Lease Area	: Acres: 5.00	Ha: 2.023
5	Cluster Details	: Total ML area (in Ha) of the cluster : (4.47 + 5.00 acres = 9.47 acres; 3.83 ha)	No. of Mines falling in the cluster : 2
6	Type of Land	: Raiyati Land (Non-Forest)	
7	Project Cost	: Rs. 36.00 lakhs	
8	EMP Budget	: Capital: :26.04 Lakhs	Recurring: 6.3 Lakhs / year
9	New or Expansion	: New	
10	Mineable Reserves	: 2,93,568 Cum	7,92,633.60Tonnes
11	Mine Life	: FiveYears	
12	Man power	: 23 persons	
13	Water Requirement	: Total water requirement is about 6.69 KLD= 0.69 KLD (Drinking & Domestic Uses) + 3.0 KLD Plantation) +3.0 KLD (Dust Suppression)	
14	Water Source	: by Authorised hired water tankers.	
15	DG Set / power	: 25 KVA (Temporary setup for Backup).	
16	Crusher	: No	
17	Nearest Water Body	: Batane River is about 1.2 km in E direction.	
18	Nearest Habitation	: Nearest habitation is about 311m in west direction.(EMP Submitted)	
19	Nearest Rail Station	: Rajhura Railway Stations about 32.31 km in WSW direction.	
20	Nearest Airport	: Gaya International Airport is about 82.50 km in NE direction.	

21	Nearest Forest	:	NA
22	Road & Highways	:	Manatu Chhatarpur Road is about 400 m in N direction. NH-139 is about 12.56 km in NW direction.
23	Approach Road	:	Approach Road is approx. 400 m in North direction

CO-ORDINATES

Toposheet No. 72D/7					
S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 17' 52.573" N	84° 17' 39.095"E	10	24° 17' 50.851"N	84° 17' 43.906"E
2	24° 17' 52.136"N	84° 17' 39.765"E	11	24° 17' 48.666"N	84° 17' 43.351"E
3	24° 17' 52.039"N	84° 17' 40.747"E	12	24° 17' 47.271"N	84° 17' 42.961"E
4	24° 17' 51.804" N	84° 17' 41.739"E	13	24° 17' 47.784"N	84° 17' 40.981"E
5	24° 17' 51.955"N	84° 17' 42.902"E	14	24° 17' 48.248"N	84° 17' 39.187"E
6	24° 17' 51.896"N	84° 17' 43.641"E	15	24° 17' 48.685"N	84° 17' 37.498"E
7	24° 17' 52.346"N	84° 17' 43.802"E	16	24° 17' 49.860"N	84° 17' 37.961"E
8	24° 17' 52.478"N	84° 17' 43.302"E	17	24° 17' 51.095"N	84° 17' 38.470"E
9	24° 17' 52.763"N	84° 17' 44.367"E			

LAND DETAILS

Khata no.	Plot no.
10	20 (P), 22 (P), 23 (P) & 24 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Palamau, Medininagar vide letter no. 943/M, dated 24.04.2025.
2	CO	:	The CO, Naudiha Bazar, Palamau vide letter no. 274, dated 21.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Palamau, Medininagar vide memo no. 1043/M, dated 07.05.2025 certified that 01 other mining lease area (4.47 Acre) exists within 500 m radius from proposed project site and total area is 9.47 Acre (3.83 Ha).
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 267, dated 08.04.2025 certified that

			the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Divisional Forest Officer, Medininagar Forest Division vide letter no. 2030, dated 09.07.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project boundary.
6	DSR	:	The DMO, Palamau, Medininagar has been certified vide memo no. 1976/M, dated 02.08.2025 that this project is mentioned in approved DSR of Palamau District as a potential village (Page no. 149).
7	Gram Sabha	:	BDO, Naudiha Bazar, Palamau vide letter no. 335, dated 21.06.2023 informed that Gram Sabha conducted on 07.06.2023
8	Mine Plan Approval	:	Mine plan approved by Assistant Director, Geology, District Geological Officer, Palamau, Jharkhand vide memo no. 108, dated 19.07.2025.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mining plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	OCM & Mechanized
2	Quarry Area	:	3.86Acres/1.563Ha Life of Mine –FiveYears
3	Waste Generation	:	5 years–28,950Cum
4	Stripping Ratio(t/m ³)	:	1:0.03
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Highest Elevation of lease Area	:	293m AMSL
8	Lowest Elevation of lease Area	:	290m AMSL
9	Ultimate Working Depth	:	263m AMSL
10	Water Table	:	250m AMSL (40m BGL)
11	Topography of Mine	:	Almost flat land withhillocks
12	Explosive Requirement	:	132kg/Day (External Agency)
13	Diesel/Fuel requirement	:	448 Litres per day

PRODUCTION DETAILS

Year	Production of stone in cum	Production of stone in tonnes	Generation of Waste/O.B in cum	Grade/Uses
1 st Year	58320.00	157464.00	9300	Road & Construction
2 nd Year	58260.00	157302.00	3480	Road & Construction
3 rd Year	58254.00	157285.80	8514	Road & Construction

4 th Year	58410.00	157707.00	3102	Road & Construction
5 th Year	58344.00	157528.80	4554	Road & Construction
Total	2,91,588.00	7,87,287.60	28,950	

LAND USE

LAND USE PATTERN			
	Existing	First to Fifth Years	At Conceptual period
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.563	1.563 (0.15ha area reclaimed, 1.413ha area converted in to water reservoir)
Haul Road	0.00	0.00 (used under quarry)	0.00
Green belt in Safety Zone	0.00	0.46	0.46
Dump with Parapet wall & Garland drain	0.00	0.00	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.00	2.023	2.023
Balance unused area	2.023	0.00	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.023	2.023	2.023

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	736	4600	0.460	Pipal Bargad Palash Fruit Bearing Trees Mango, Jackfruit, Guava, Jamun
	Haul Road	3.0 x 3.0	532	400 M Approach Road 400/3 = 133 Plants 133 x 4row = 532Plant	400 m	
	Reclaimed Area	2.5 x 2.5	240	1500	0.15	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1508	6100	0.61	

In accordance with Office Memorandum No. F.No. IA3-22/3/2024-IA.III (E-241594), dated 24.07.2024, issued by the Ministry of Environment, Forest and Climate Change (MoEF&CC), out of the total 1508 trees proposed to be planted in the designated green belt area—both within and outside the lease boundary—10% (approximately 151 saplings) shall be earmarked under the national tree plantation campaign "Ek Ped Ma Ke Naam."

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget.

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO	Mitigative measures to protect Environment	Capital Cost (In Lakhs)	Recurring cost (In Lakhs)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	15.0	1.5
02.	Green belt development safety zone 7.5mtr, Reclaimed area and along the road (for each plant including hedges and fences) @ No. of plants 1508 x 500Rs.	7.54	3.0
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	1.0
04.	Solar Light Installed in Village Ghujwa 10Pcs @15000	1.5	0.30
05.	Settling tank & Garland drain	2.0	0.5
TOTAL		26.04	6.3

Additional Blasting cost

Blasting			
1	Training and Awareness of personnel during Blasting operations	50,000	0
2	Provision of safe distance from the Project site for the settlements		
	• Blasting shelters and Sirens	50,000	5,000
	• Portable Drop Arm Barrier	2,00,000	10,000
Total cost		3,00,000	15,000

Endangered species of flora, fauna & Schedule-I

Based on the preliminary study conducted during the baseline data generation phase, along with consultations with local residents and relevant authorities, no endangered species of flora or fauna, including those listed under Schedule-I of the Wildlife (Protection) Act, 1972, were observed within the designated 10 km study area.

Solid Waste Management

During the plan period, about 28,950 m³ of overburden and intercalated waste will be generated. During Plan period gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible. During rainy season to prevent dump failure/soil erosion, toe-wall with weep-holes and garland drains will be constructed.

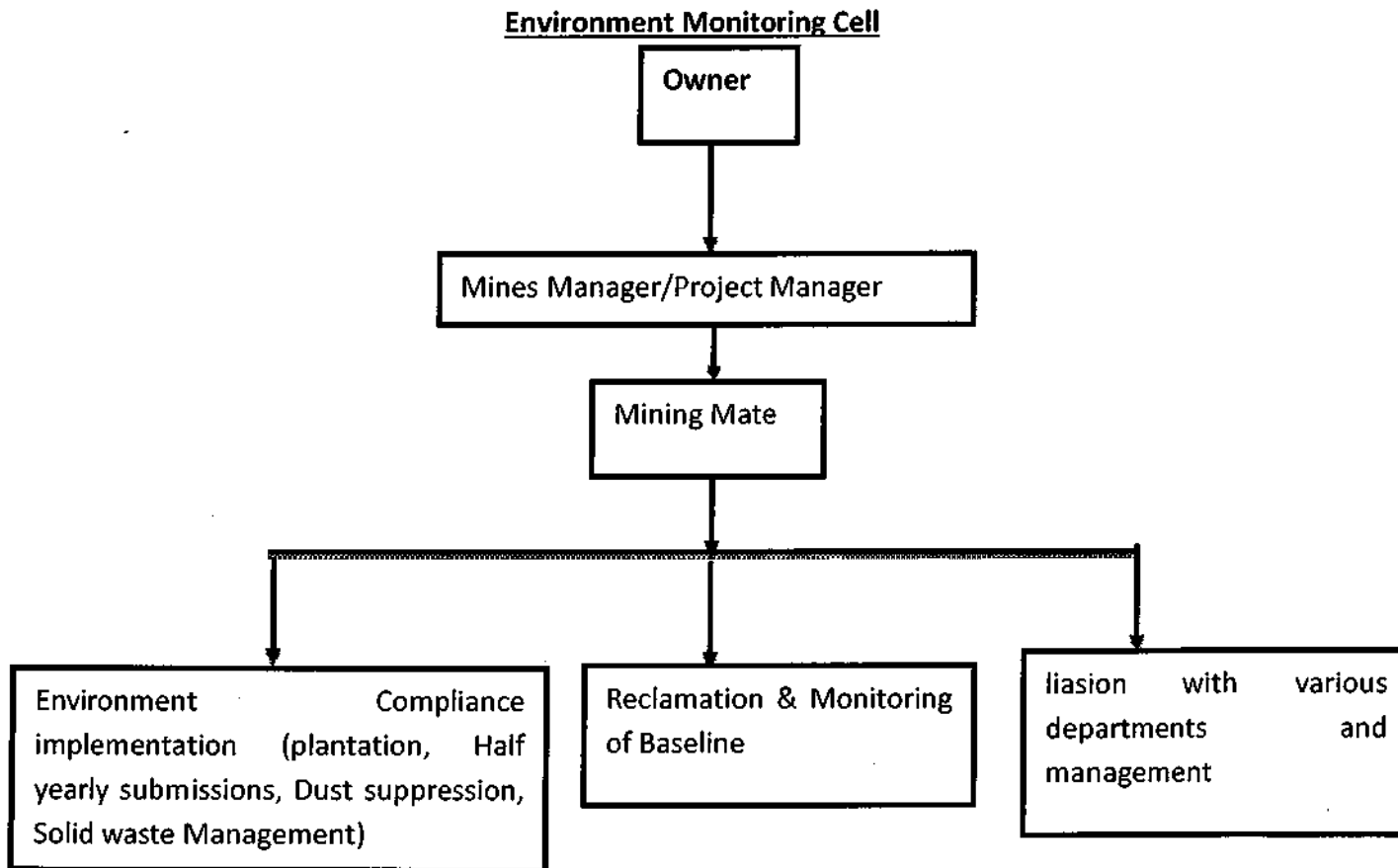


Fig: Organization Chart for Environment Management Cell

Responsibility of Environment Management cell

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to

Low-Risk Rank and hence the risk is “Acceptable”

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.

- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/ loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ghujwa Stone Mine of M/s Jai Bajrang Minerals (Partner : Shri Pradeep Kumar & Others), Village : Ghujwa, Thana : Naudiha Bazar, Thana no. : 386, Distt.: Palamau, Jharkhand (2.023 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

7. Hisra Stone Deposit of M/s Raja Stone Works (Prop. : Shri Chandan), Village : Hisra, Thana : Chainpur, Thana no. : 89, Distt.: Palamau, Jharkhand (2.384 Ha).

(Proposal no.: SIA/JH/MIN/546211 /2025)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 10.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 78,064 Cum Per Annum or 2,10,774 Ton Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Hisra Stone Deposit by M/s Raja Stone Works
2	Proprietor	: Shri Chandan
3	Lease Address	: Village- Hisra, PS & Anchal- Chainpur, District- Palamu, Jharkhand
4	Lease Area	: Acres: 5.89 Ha:2.384
5	Cluster Details	: NA
6	Type of Land	: Raiyati Land (Non-forest land)
7	Project Cost	: 48.00 Lakhs
8	EMP Budget	: Capital: 28.05 Lakhs Recurring: 6.0 Lakhs / year
9	New or Expansion	: New
10	Mineable Reserves	: 3,63,976Cum 9,82,736 Tonnes
11	Mine Life	: Five Years
12	Man power	: 23 persons
13	Water Requirement	: Total water requirement is about 10.805 including drinking (0.805 KLD) & sprinkling (8 KLD) and for greenbelt (2.0 KLD).
14	Water Source	: by Authorized hired water tankers
15	DG Set / power	: 125 KVA (Temporary setup for Backup)
16	Crusher	: Yes (Proposed mobile/fixed Crusher)
17	Nearest Water Body	: Nawadih Pahar (POND), Nawadih is about 1.13 km in w direction and RanitalDam,Ranital is about 5.24 km in NE direction
18	Nearest Habitation	: Nawadih is about 200 m in SSW direction.(EMP Submitted)
19	Nearest Rail Station	: Daltonganj Railway Station is about 11.53 km in NE direction.
20	Nearest Airport	: Gaya Airport is about 130.07 km in ENE direction.

21	Nearest Forest	:	Forest	Distance	Direction
			Hisra Forest	0.35	NE
			Surjwedhwa Forest, Nawadih	2.32	SSW
			Berma P F	2.04	SW
22	Approach Road	:	Approach Road is approx. 310 m in North direction.		
23	Road & Highways	:	Ramkanda Medininagar road is 300 m in SSE direction. National Highway (NH- 39) is 9.50 KM in North direction.		

CO-ORDINATES

Toposheet No. F44F13					
PILLARS	LATITUDE	LONGITUDE	PILLARS	LATITUDE	LONGITUDE
1	23° 57' 50.971" N	83° 59' 14.357" E	19	23° 57' 49.513" N	83° 59' 21.756" E
2	23° 57' 49.510" N	83° 59' 13.823" E	20	23° 57' 50.284" N	83° 59' 21.419" E
3	23° 57' 48.796" N	83° 59' 13.665" E	21	23° 57' 50.795" N	83° 59' 19.263" E
4	23° 57' 46.904" N	83° 59' 14.253" E	22	23° 57' 51.126" N	83° 59' 19.973" E
5	23° 57' 46.740" N	83° 59' 16.006" E	23	23° 57' 51.058" N	83° 59' 20.430" E
6	23° 57' 46.413" N	83° 59' 17.236" E	24	23° 57' 51.523" N	83° 59' 20.843" E
7	23° 57' 47.373" N	83° 59' 17.203" E	25	23° 57' 51.648" N	83° 59' 20.420" E
8	23° 57' 47.195" N	83° 59' 17.982" E	26	23° 57' 51.905" N	83° 59' 20.884" E
9	23° 57' 46.640" N	83° 59' 18.738" E	27	23° 57' 52.032" N	83° 59' 20.442" E
10	23° 57' 47.113" N	83° 59' 19.002" E	28	23° 57' 51.803" N	83° 59' 19.920" E
11	23° 57' 47.607" N	83° 59' 18.130" E	29	23° 57' 51.269" N	83° 59' 18.767" E
12	23° 57' 48.167" N	83° 59' 18.006" E	30	23° 57' 50.276" N	83° 59' 17.842" E
13	23° 57' 47.741" N	83° 59' 19.803" E	31	23° 57' 49.109" N	83° 59' 20.122" E
14	23° 57' 47.304" N	83° 59' 20.818" E	32	23° 57' 49.500" N	83° 59' 17.541" E
15	23° 57' 48.864" N	83° 59' 21.001" E	33	23° 57' 50.080" N	83° 59' 16.813" E
16	23° 57' 48.393" N	83° 59' 22.133" E	34	23° 57' 50.571" N	83° 59' 16.692" E
17	23° 57' 49.426" N	83° 59' 22.856" E	35	23° 57' 51.052" N	83° 59' 15.876" E
18	23° 57' 50.110" N	83° 59' 22.012" E	36	23° 57' 50.699" N	83° 59' 15.477" E

LAND DETAILS

Khata no.	Plot no.
20	198
36	238, 243 (P) & 240
63	200

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Palamau, Medininagar vide letter no. 1348/M, dated 24.05.2025.

2	CO	:	The CO, Chainpur, Palamau vide letter no. 19, dated 04.01.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO Cluster	:	DMO, Palamau, Medininagar vide memo no. 1709/M, dated 18.06.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 417, dated 28.06.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Divisional Forest Officer, Medininagar Forest Division vide letter no. 2093, dated 11.07.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project boundary.
6	DSR	:	The DMO, Palamau, Medininagar has been certified vide memo no. 2165/M, dated 09.09.2025 that this project is mentioned in approved DSR of Palamau District as a potential village (Page no. 135).
7	Gram Sabha	:	Panchayat Secretary, Nawadih, Ramgarh (Palamau) vide letter no. 26, dated 16.01.2025 informed that Gram Sabha conducted on 16.01.2025
8	Mine Plan Approval	:	Mine plan approved by Assistant Director, Geology, District Geological Officer, Palamau, Jharkhand vide memo no. 117, dated 06.08.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra through letter dated 10.09.2025 affirmed that the mining plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	OCM &Semi Mechanised	
2	Quarry Area	:	3.72Acres / 1.509HA	Life of Mine – Five Years
3	Waste Generation	:	5 years–61,349 Cum	
4	Stripping Ratio(t/m ³)	:	1:0.04	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	347 m ASML	
8	Lowest Elevation of lease Area	:	338 m ASML	
9	Ultimate Working Depth	:	304 m ASML	
10	Water Table	:	290 m ASML (48 m BGL)	
11	Topography of Mine	:	Small hillocks	

12	Explosive Requirement	:	42.53 or 43 Kg/Day (External Agency)
13	Diesel/Fuel requirement	:	364Litres per day

PRODUCTION DETAILS

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in Cum	Intercalated waste in Cum	Total Waste in Cum
1st Year	69,958	1,88,887	14,070	3,682	17,752
2nd Year	71,283	1,92,465	23,370	3,752	27,122
3rd Year	71,839	1,93,965	0	3,781	3,781
4th Year	72,832	1,96,646	0	3,833	3,833
5th Year	78,064	2,10,774	4,752	4,109	8,861
Total	3,63,976	9,82,736	42,192	19,157	61,349

LAND USE

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area In Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.509	1.509 (0.155ha area shall be reclaimed, 1.354 ha converted in to water reservoir)
Haul Road	0.00	0.00 (comes under quarry)	0.00
Proposed Crusher	0.00	0.00 (comes under quarry)	0.00
Green belt in Safety Zone	0.00	0.875	0.875
Dump with Parapet wall & Garland drain	0.00	0.00 (comes under quarry)	0.00
Total area in use	0.00	2.384	2.384
Balance unused area	0.00	0.00	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.384	2.384	2.384

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1400	8750	0.875	Pipal Bargad Palash
	Haul Road	3.0 x 3.0	413	310 M Approach Road	310mtr	

				310/3=103.3 103.3 x 4 row = 413 Plants		Fruit Bearing Trees Mango, Jackfruit, Guava, Jamun
	Reclaimed area/Backfilled area	2.5 x 2.5	248	1550	0.155	
	Compensatory planation (in accordance to Gram Panchayat)	2.5 x 2.5	150	15 trees cut multiply 10 times = 150	---	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			2211	10300	1.030	

In accordance with Office Memorandum No. F.No. IA3-22/3/2024-IA.III (E-241594), dated 24.07.2024, issued by the Ministry of Environment, Forest and Climate Change (MoEF&CC), out of the total 2211 trees proposed to be planted in the designated green belt area—both within and outside the lease boundary—10% (approximately 221 saplings) shall be earmarked under the national tree plantation campaign "Ek Ped Ma Ke Naam."

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO	Mitigative measures to protect Environment	Capital Cost (In Lakhs)	Recurring cost (In Lakhs)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	15.0	2.5
02.	Green belt development safety zone 7.5mtr, Reclaimed or backfilled area, Compensatory plantation and along the road (for each plant including hedges and fences) @ No. of plants 2211 x 500Rs.	11.05	2.0
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	1.0
04.	Settling Tank & Garland drain	2.0	0.5
TOTAL		28.05	6.0

Additional Blasting cost

Blasting			
1	Training and Awareness of personnel during Blasting operations	50,000	0
2	Provision of safe distance from the Project site for the settlements		
	• Blasting shelters and Sirens	50,000	5,000
	• Portable Drop Arm Barrier	2,00,000	10,000
Total cost		3,00,000	15,000

Endangered species of flora, fauna & Schedule-I

Based on the preliminary study conducted during the baseline data generation phase, along with consultations with local residents and relevant authorities, no endangered species of flora or fauna, including those listed under Schedule-I of the Wildlife (Protection) Act, 1972, were observed within the designated 10 km study area.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Solid Waste Management

During the plan period, about 28,950 m³ of overburden and intercalated waste will be generated. During Plan period gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible. During rainy season to prevent dump failure/soil erosion, toe-wall with weep-holes and garland drains will be constructed.

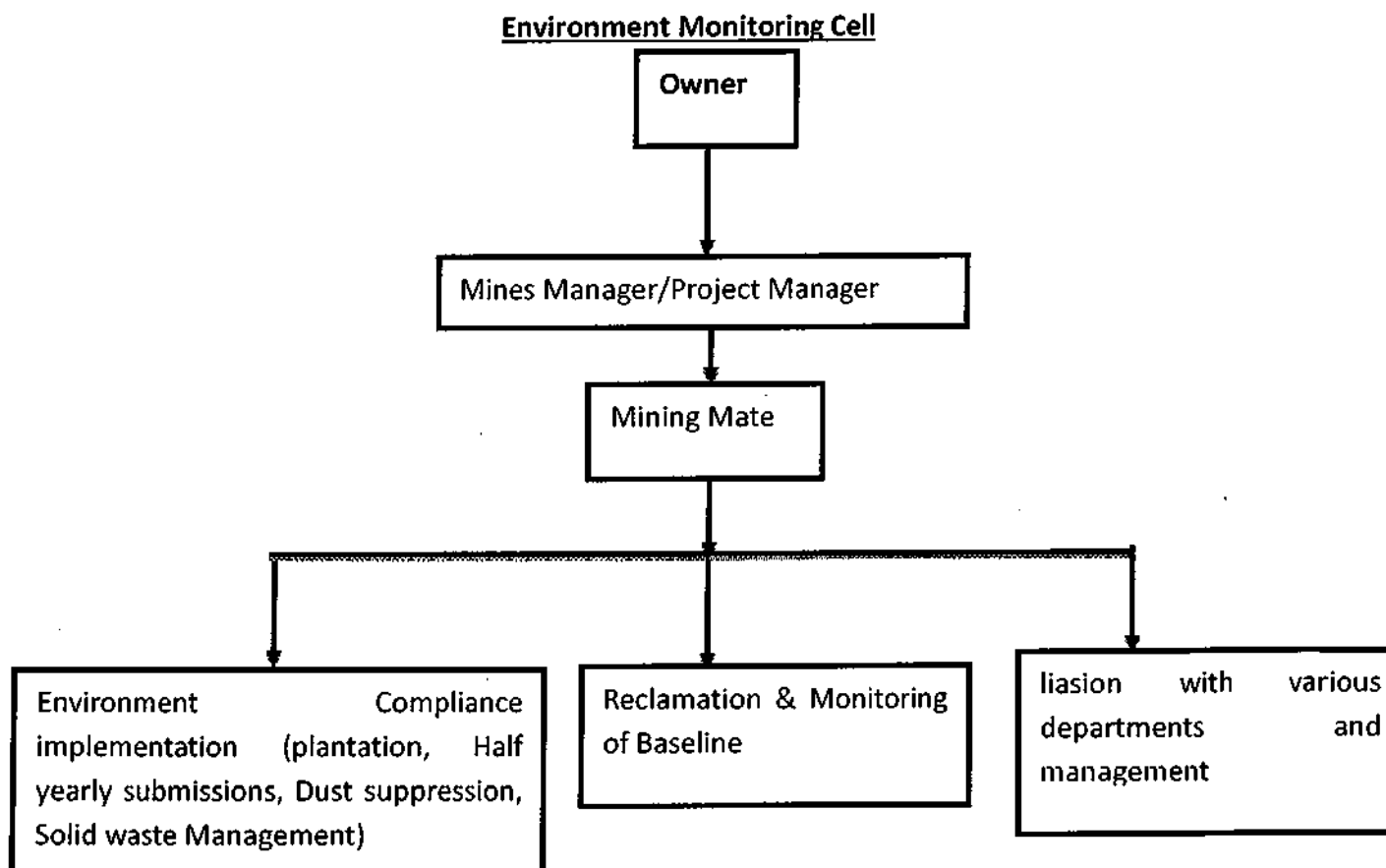


Fig: Organization Chart for Environment Management Cell

Responsibility of Environment Management cell

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.

- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident,	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to

Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.

- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)

- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/ loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Hisra Stone Deposit of M/s Raja Stone Works (Prop. : Shri Chandan), Village : Hisra, Thana : Chalnपुर, Thana no. : 89, Distt.: Palamau, Jharkhand (2.384 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be

maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

8. Mahuari Stone Deposit of M/s Diamond Stone Mine & Chips (Partners : Shri Pradeep Singh & Smt. Sunita Devi), Village : Mahuari, Thana : Naudiha Bazar, Thana no. : 180, Distt.: Palamau, Jharkhand (1.335 Ha).

(Proposal no.: SIA/JH/MIN/548965 /2025)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 10.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

ToR Application for: Proposed Capacity: 28,158cum Per Annum or 76,027 Ton per Annum.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Mahuari Stone Deposit by M/s Diamond Stone Mine & Chips.
2	Partners	: Sri Pradeep Singh & Smt. Sunita Devi.
3	Lease Address	: Village- Mahuari, Anchal - Naudiha Bazar, District- Palamu, Jharkhand
4	Lease Area	: Acres: 3.30 Ha:1.335
5	Cluster Details	: Total ML area of the cluster : (5.73+5.85+5.01+3.30 acre= 19.89 acre or 8.05 ha) No. of Mines falling in the cluster : 4
6	Type of Land	: Raiyati Land
7	Project Cost	: 48.00 Lakhs

8	EMP Budget	:	Capital: 25.36 Lakhs	Recurring: 9 Lakhs / year
9	New or Expansion	:	New	
10	Mineable Reserves	:	1,48,126 Cum	3,99,940Tonnes
11	Mine Life	:	7 Years	
12	Man power	:	17 persons	
13	Water Requirement	:	Total water requirement is about 10.595 including drinking (0.595 KLD) & sprinkling (2.0 KLD) and for greenbelt (8.0 KLD).	
14	Water Source	:	The drinking water will be available from nearby village by tractor tank manually by labors at the site.	
15	DG Set / power	:	25 KVA (Temporary setup for Backup)	
16	Crusher	:	NA	
17	Nearest Water Body	:	Batane Dam is about 1.47km in WSW direction and Batane River is about 1.3 km in W direction.	
18	Nearest Habitation	:	Mahuariis about 0.45km in ESE direction(EMP Submitted)	
19	Nearest Rail Station	:	Daltonganj Railway Station is about 46km in SW direction.	
20	Nearest Airport	:	Gaya international Airport is about 76.08 km in ENE direction.	
21	Nearest Forest	:	BurhiBakhar Protected Forest is about 300m in W direction.	
22	Road & Highways	:	NH-69is about 3.29 km in NE direction	
23	Approach Road	:	Approach Road is about 277 m in NE direction.	

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 25' 55.652" N	84° 16' 28.483" E	16	24° 25' 53.492" N	84° 16' 36.008" E
2	24° 25' 55.667" N	84° 16' 29.342" E	17	24° 25' 53.023" N	84° 16' 35.737" E
3	24° 25' 56.172" N	84° 16' 30.909" E	18	24° 25' 53.077" N	84° 16' 35.172" E
4	24° 25' 56.378" N	84° 16' 33.003" E	19	24° 25' 53.468" N	84° 16' 34.859" E
5	24° 25' 56.452" N	84° 16' 34.733" E	20	24° 25' 52.852" N	84° 16' 34.149" E
6	24° 25' 57.101" N	84° 16' 35.307" E	21	24° 25' 52.180" N	84° 16' 33.333" E
7	24° 25' 57.031" N	84° 16' 37.125" E	22	24° 25' 52.219" N	84° 16' 32.628" E
8	24° 25' 56.367" N	84° 16' 37.411" E	23	24° 25' 52.651" N	84° 16' 32.797" E
9	24° 25' 56.367" N	84° 16' 35.439" E	24	24° 25' 53.394" N	84° 16' 32.966" E
10	24° 25' 55.777" N	84° 16' 35.466" E	25	24° 25' 54.651" N	84° 16' 33.082" E
11	24° 25' 55.738" N	84° 16' 34.721" E	26	24° 25' 54.265" N	84° 16' 32.386" E
12	24° 25' 55.455" N	84° 16' 34.755" E	27	24° 25' 55.233" N	84° 16' 32.436" E
13	24° 25' 54.696" N	84° 16' 35.444" E	28	24° 25' 55.122" N	84° 16' 31.910" E
14	24° 25' 54.199" N	84° 16' 35.867" E	29	24° 25' 54.931" N	84° 16' 30.003" E
15	24° 25' 53.675" N	84° 16' 35.457" E	30	24° 25' 54.679" N	84° 16' 28.308" E

LAND DETAILS

Khata no.	Plot no.
23	42 (P), 43 & 58

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STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Palamau, Medininagar vide letter no. 1582/M, dated 19.07.2023.
2	CO	:	The CO, Naudiha Bazar, Palamau vide letter no. 177, dated 28.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II and also certified that habitation exists within 500 meters from mining lease area.
3	DMO Cluster	:	DMO, Palamau, Medininagar vide memo no. 1826/M, dated 31.08.2024 certified that 03 other mining lease area (5.73 Acre, 5.85 Acre & 5.01 Acre) exists within 500 m radius from proposed project site and total area is 16.59 Acre (6.71 Ha).
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 47, dated 28.01.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Divisional Forest Officer, Medininagar Forest Division vide letter no. 2210, dated 11.07.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project boundary.
6	DSR	:	This project is mentioned in approved DSR of Palamau District (SI no. 12, Page no. 104).
7	Gram Sabha	:	BDO, Naudiha Bazar, Palamau vide letter no. 263, dated 10.05.2023 informed that Gram Sabha conducted on 04.05.2023.
8	Mine Plan Approval	:	Mine plan approved by Assistant Director, Geology, District Geological Officer, Palamau, Jharkhand vide memo no. 109, dated 19.07.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra through letter dated 10.09.2025 affirmed that the mining plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	OCM &Semi Mechanised	
2	Quarry Area	:	1.69ACRES / 0.684HA	Life of Mine – 7 years
3	Waste Generation	:	5 years–19,219 cum	
4	Stripping Ratio(t/m ³)	:	1:0.02	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	265 m AMSL	

8	Lowest Elevation of lease Area	:	261 m AMSL
9	Ultimate Working Depth	:	240 m AMSL
10	Water Table	:	220 m AMSL (41 m BGL)
11	Topography of Mine	:	Uneven area
12	Explosive Requirement	:	43 Kg/Day (External Agency)
13	Diesel/Fuel requirement	:	196 Litres per day

PRODUCTION DETAILS

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in Cum	Intercalated waste in Cum	Total Waste in cum
1st	18,896	51,018	10,686	995	11,681
2nd	19,488	52,618	2,808	1,026	3,834
3rd	20,526	55,419	0	1,080	1,080
4th	21,711	58,621	0	1,143	1,143
5th	28,158	76,027	0	1,482	1,482
Total	1,08,779	2,93,703	13,494	5,725	19,219

LAND USE

LAND USE PATTERN			
Land Utilization	Existing	First to Fifth Years	After Life of Mine
Excavation	0.00	0.438	0.684 (0.124 ha area shall be reclaimed, 0.560 ha converted into water reservoir)
Waste Dump	0.00	0.207 (Comes under quarry area)	Nil (waste dump to be removed and backfilled)
Road	0.00	0.002 (Comes under quarry area)	0.00
Infrastructure	0.00	0.0	0.0
Green belt in Safety Zone	0.00	0.651	0.651
Total	0.000	1.298	1.335
Unused area	1.335	0.037 (Comes under quarry area)	0
Total Lease Area	1.335		

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/wplants	TotalNo. of Plants	Area Cover in SquareMeters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1042	6510	0.651	Pipal
	Haul Road	3.0 x 3.0	368	277 M Approach Road 277/3=92Plants	277 m	Bargad Palash Fruit Bearing

				92x4rows =368 Plants		Trees Mango, Jackfruit, Guava, Jamun
	Reclaimed area	2.5 x 2.5	198	1240	0.124	
	Compensatory planation (in accordance to Grampanchayat)	3.0 x 3.0	30	---	---	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1638	6510	0.775	

In accordance with Office Memorandum No. F.No. IA3-22/3/2024-IA.III (E-241594), dated 24.07.2024, issued by the Ministry of Environment, Forest and Climate Change (MoEF&CC), out of the total 1638 trees proposed to be planted in the designated green belt area—both within and outside the lease boundary—10% (approximately 164 saplings) shall be earmarked under the national tree plantation campaign "Ek Ped Ma Ke Naam."

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO	Mitigative measures to protect Environment	Capital Cost (In Lakh)	Recurring cost (In Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	15.17	2.5
02.	Green belt development safety zone 7.5mtr, reclaimed area, compensatory plantation and along the road (for each plant including hedges and fences) @ No. of plants 1638x 500Rs.	8.19	5.0
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	1.0
04.	Settling Tank & Garland drain	2.0	0.5
TOTAL		25.36	9.0

Additional Blasting cost

Blasting			
1	Training and Awareness of personnel during Blasting operations	50,000	0
2	Provision of safe distance from the Project site for the settlements		
	• Blasting shelters and Sirens	50,000	5,000
	• Portable Drop Arm Barrier	2,00,000	10,000
Total cost		3,00,000	15,000

Endangered species of flora, fauna & Schedule-I

Based on the preliminary study conducted during the baseline data generation phase, along with consultations with local residents and relevant authorities, no endangered species of flora or fauna, including those listed under Schedule-I of the Wildlife (Protection) Act, 1972, were observed within the designated 10 km study area.

Environmental Monitoring period: March 2025- May 2025

Baseline Monitoring Location

Locations Code	Landuse/Landcover/Source	Locations	Direction	Distance (km)	Latitude	Longitude
AAQ 1, SQ 1 & NQ 1	Project Site	On site	-	-	24°25'54.73"N	84°16'33.95"E
AAQ 2, SQ 2 & NQ 2	Industrial Site	Crushing Unit	East	0.24	24°26'00.85"N	84°16'46.91"E
AAQ 3, SQ 3, NQ 3 & GWQ 1	School/Handpump	Mahuari middle school	ESE	0.5	24°25'48.67"N	84°16'52.68"E
AAQ 4, SQ 4, NQ 4 & SWQ 1	Water body	Batane Dam	WSW	1.45	24°25'40.31"N	84°15'40.08"E
AAQ 5, SQ 5, NQ 5 & GWQ 2	Residential Area	Jay Mahadev Temple, Gulabjhari	South	1.8	24°24'53.66"N	84°16'32.68"E
AAQ 6, SQ 6, NQ 6 & GWQ 3	School/Handpump	Primary school Dubaridih	North	3.5	24°27'52.44"N	84°16'33.28"E
AAQ 7, SQ 7, NQ 7 & SWQ 2	Water body	Batane Bridge	NW	2.71	24°26'55.19"N	84°15'18.67"E
AAQ 8, SQ 8 & NQ 8	Residential Area	Dhakcha Panchayat	East	3.91	24°26'12.20"N	84°18'52.65"E

Value of test Report

Air

Parameter		AAQ 1	AAQ 2	AAQ 3	AAQ 4	AAQ 5	AAQ 6	AAQ 7	AAQ 8
PM ₁₀ (µg/m ³)	Min	58.4	76.7	44.8	44.9	42.4	41.8	49.7	40.6
	Max	67.7	85.9	61.0	43.1	53.2	48.7	54.9	51.2
	Avg	61.9	78.7	50.2	48.5	47.6	46.0	52.2	45.9
PM _{2.5} (µg/m ³)	Min	35.0	31.4	30.2	32.3	24.1	25.6	36.9	30.2
	Max	40.6	37.1	36.9	33.0	31.8	33.1	39.9	36.4
	Avg	37.1	33.9	33.8	31.3	27.0	29.3	38.6	33.2
SO ₂ (µg/m ³)	Min	5.5	5.4	6.0	10.8	6.4	6.9	7.9	8.3
	Max	12.9	13.6	13.2	9.8	12.8	11.7	10.4	12.2

	Avg	10.1	11.1	9.6	12.4	10.2	9.7	9.5	10.6
NO ₂ (µg/m ³)	Min	10.2	8.2	8.3	15.1	9.2	9.8	10.7	9.5
	Max	18.7	16.3	17.9	14.4	17.5	16.5	14.3	14.6
	Avg	13.9	13.2	14.3	8.6	14.0	14.0	13.0	12.4
CO (µg/m ³)	Min	0.4	0.6	0.4	0.8	0.5	0.5	0.8	0.4
	Max	1.7	1.7	1.9	0.4	1.6	1.5	1.0	1.5
	Avg	1.2	1.2	1.2	0.9	1.2	1.2	0.9	1.1

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Location code	Sampling Location	Category of Area	Limit (as per CPCB Guidelines), Leq, dB (A)		Day Time	Night Time
			DAY*	NIGHT*	Leq dB(A)	Leq dB(A)
NQ1	On site Lat-24°25'54.73"N; Long- 84°16'33.95"E	PROJECT SITE	75	70	59.9	38.4
NQ2	Crushing Unit Nearby Project Site Lat.- 24°26'0.85"N; Long.- 84°16'46.91"E	INDUSTRIAL ZONE	75	70	65.1	47.4
NQ3	Mahuari Middle School Lat- 24°25'48.67"N; Long - 84°16'52.68"E	RESIDENTIAL ZONE	55	45	42.2	29.5
NQ4	Batane Dam Lat. 24°25'40.31"N; Long - 84°15'40.08"E	SILENT ZONE	50	40	35.4	25.7
NQ5	Jay Mahadev Temple, Gulabjhari Lat.- 24°24'53.66"N; Long - 84°16'32.68"E	SILENT ZONE	50	40	39.8	28.6
NQ6	Primary school Dubaridih Lat - 24°27'52.44"N; Long - 84°16'33.28"E	RESIDENTIAL ZONE	55	45	45.6	31.5
NQ7	Batane Bridge Lat - 24°26'55.19"N; Long - 84°15'18.67"E	SILENT ZONE	50	40	36.4	30.1
NQ8	Dhakcha Panchayat Lat - 24°26'12.20"N; Long - 84°18'52.65"E	RESIDENTIAL ZONE	55	45	44.8	35.6

Soil

S.no	Parameter	Units	Method	SQ-1	SQ-2	SQ-3	SQ-4	SQ-5	SQ-6	SQ-7	SQ-8
1	Texture	...	IS 2720 (Part-4)	Sand y Clay Loam	Sand y Clay Loam	Sand y Clay Loam	Sand y Clay Loam	Sand y Clay Loam	Sand y Clay Loam	Sand y Clay Loam	Sand y Clay Loam
2	Sand	%	IS 2720 (Part-4)	53.1	54.5	55.3	57.2	59.3	53.1	55.2	54.3

3	Silt	%	IS 2720 (Part-4)	30.7	28.4	29.4	28.1	26.2	28.7	27.8	28.4
4	Clay	%	IS 2720 (Part-4)	16.2	17.1	15.3	14.7	14.5	18.2	17	17.3
5	Electrical Conductivity (EC)	µs/cm	IS 14767	19.8	21.9	20.6	22.7	23.5	19.9	21.1	21.6
6	pH	...	IS 2720 (Part-26)	7.79	7.85	7.66	7.56	7.81	7.55	7.46	7.76
7	Bulk Density	g/cm ³	IS 2386 (Part-4)	1.31	1.57	1.54	1.49	1.48	1.33	1.39	1.44
8	Water Holding Capacity (WHC)	%	IS 2720 (Part-2)	37.8	35.8	35.2	34.8	33.6	35.8	36.9	36.2
9	Sodium, (Na)	mg/kg	USFPA-3050A	125.3	119.2	119.8	121.9	125.5	121.3	123.2	119.8
10	Potassium (K)	mg/kg	USEPA-3050A	240.4	237.5	248.2	218.3	229.9	220.4	231.5	249.2
11	Total Nitrogen (N)	mg/kg	ETS/STP/ SOIL-15	145.34	155.11	172.18	167.3	53.61	150.44	165.11	162.18
12	Chloride, (Cl)	mg/kg	BS 1377 - 3	431.8	450.2	404.2	422.7	425	455.8	470.2	438.2
13	Magnesium, (Mg)	mg/kg	ETS/STP/ SOIL-08	308.5	380.4	423.9	413.7	386.6	398.5	380.4	413.8
14	Organic Matter, (OM)	%	IS 2720 (Part-22)	2.65	2.82	2.58	1.89	2.63	2.52	2.51	2.58
15	Aluminium, (Al)	mg/kg	USEPA-3050A	0.37	0.4	0.36	0.39	0.38	0.35	0.37	0.36
16	Cadmium, (Cd)	mg/kg	USEPA-3050A	0.45	0.51	0.45	0.43	0.45	0.45	0.5	0.49
17	Chromium, (Cr)	mg/kg	USEPA-3050A	0.29	0.33	0.31	0.51	0.3	0.22	0.28	0.27
18	Copper, (Cu)	mg/kg	USEPA-3050A	1.45	1.56	1.65	1.47	1.5	1.22	1.36	1.41
19	Iron, (Fe)	mg/kg	USEPA-3050A	123.2	144.2	136.8	129.1	136.6	138.2	144.2	136.8
20	Lead, (Pb)	mg/kg	USEPA-3050A	2.29	2.31	1.96	2.14	2.34	2.02	2.03	2.11
21	Manganese, (Mn)	mg/kg	USEPA-3050A	3.52	3.19	3.29	2.52	3.38	3.52	3.39	3.29
22	Zinc, (Zn)	mg/kg	USEPA-3050A	1.67	1.76	1.8	1.77	1.81	1.76	1.66	1.8
23	Nickel, (Ni)	mg/kg	USEPA-3050A	1.12	1.54	1.55	1.39	1.92	1.19	1.45	1.33
24	Calcium, (Ca)	mg/kg	IS 2720 (Part-23)	940	1094.5	1083.9	1114.6	1130.3	1022	1094.5	1103.9

25	Phosphorus (PO4)	mg/kg	ETS/STP/ SOIL-19	37.4	51.1	38.9	46.8	43.3	40.4	49.1	50.9

Surface water

S. No.	Parameter	UNITS	METHOD	SWQ-1	SWQ-2
1	Colour	Hazen	IS:3025 (Pt-4)	<5.0	<5.0
2	Odour	---	IS:3025 (Pt-5)	Agreeable	Agreeable
3	pH	---	IS:3025 (Pt-11)	7.24	7.07
4	Turbidity	NTU	IS:3025 (Pt-10)	18.12	7.13
5	Total Dissolved Solid (TDS)	Mg/l	IS:3025 (Pt-16)	464.9	448.5
6	Total Alkalinity (CaCO3)	Mg/l	IS:3025 (Pt-23)	171.5	152.7
7	Total Hardness (CaCO3)	Mg/l	IS:3025 (Pt-21)	230.4	177.8
8	Chloride (Cl)	Mg/l	IS:3025 (Pt-32)	72.2	65.5
9	Calcium (Ca)	Mg/l	IS:3025 (Pt-40)	44.6	71.2
10	Mineral Oil	Mg/l	IS:3025 (Pt-39)	<0.01	<0.01
11	Sulphate (SO4)	Mg/l	IS:3025 (Pt-24)	31.59	50.54
12	Nitrate (NO3)	Mg/l	IS:3025 (Pt-34)	0.84	0.93
13	Fluoride (F)	Mg/l	IS:3025 (Pt-60)	0.26	0.23
14	Iron (Fe)	Mg/l	IS:3025 (Pt-53)	0.28	0.29
15	Aluminium (Al)	Mg/l	APHA-3500 (B)	<0.01	<0.01
16	Selenium (Se)	Mg/l	APHA-3113 (B)	<0.01	<0.01
17	Cyanide (Cn)	Mg/l	APHA-4500 (C)	0.02	<0.02
18	Copper (Cu)	Mg/l	APHA-3111(B)	<0.05	<0.05
19	Magnesium (Mg)	Mg/l	IS:3025 (Pt-45)	11.47	13.02
20	Manganese (Mn)	Mg/l	APHA-3111(B)	<0.1	<0.1
21	Zinc (Zn)	Mg/l	APHA-3111 (B)	0.55	0.66
22	Cadmium (Cd)	Mg/l	APHA-3111 (B)	<0.001	0.001
23	Lead (Pb)	Mg/l	APHA-3111 (B)	<0.01	<0.01
24	Boron	Mg/l	IS:3026(Pt-57)	<0.05	<0.05
25	Mercury (Hg)	Mg/l	APHA-3112 (B)	<0.001	0.001
26	Molybdenum(mo)	Mg/l	IS:3025(Pt-2)	<0.05	<0.05
27	Nickel (Ni)	Mg/l	APHA-3111 (B)	<0.01	<0.01
28	Arsenic (As)	Mg/l	APHA-3500 (B)	<0.01	<0.01
29	Chromium (Cr+6)	Mg/l	APHA-3500 Cr-B	<0.01	<0.01
30	Conductivity (25°C)	µs/Cm	APHA-2510	650.3	70.39
31	Chemical Oxygen Demand (COD)	Mg/l	APHA-5220 (B)	15.71	18.36
32	Biological Oxygen Demand (BOD at 27°C for 3 day)	Mg/l	APHA- 4500 (D)	3.23	3.42
33	Dissolve Oxygen (DO)	Mg/l	APHA-5210	6.52	4.86
34	E. Coli	MPN/100ml	IS:1622-1981	220	160
35	Total Coliform	MPN/100ml	IS:1622-1981	350	240

Ground Water

S.no	Parameter	Units	Method	GWQ 1	GWQ 2	GWQ 3
1	Colour	Hazen	IS:3025 (Pt-4)	<5.0	<5.0	<5.0
2	Odour	---	IS:3025 (Pt-5)	Agreeable	Agreeable	Agreeable
3	pH	---	IS:3025 (Pt-	7.8	7.66	7.59

			11)			
4	Taste	--	IS:3025 (Pt-8)	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS:3025 (Pt-10)	<1.0	<1.0	<1.0
6	Total Dissolved Solid (TDS)	Mg/l	IS:3025 (Pt-16)	335.9	468.9	357.5
7	Total Alkalinity (CaCO ₃)	Mg/l	IS:3025 (Pt-23)	124.8	164.9	141.2
8	Total Hardness (CaCO ₃)	Mg/l	IS:3025 (Pt-21)	170.8	213.7	187.6
9	Chloride (Cl)	Mg/l	IS:3025 (Pt-32)	119.3	113.8	85.5
10	Calcium (Ca)	Mg/l	IS:3025 (Pt-40)	70.8	79	65.8
11	Mineral Oil	Mg/l	IS:3025 (Pt-39)	<1.0	<1.0	<1.0
12	Sulphate (SO ₄)	Mg/l	IS:3025 (Pt-24)	40.5	50.05	36.24
13	Nitrate (NO ₃)	Mg/l	IS:3025 (Pt-34)	0.92	1.1	0.78
14	Fluoride (F)	Mg/l	IS:3025 (Pt-60)	0.3	0.28	0.22
15	Iron (Fe)	Mg/l	IS:3025 (Pt-53)	0.27	0.23	0.17
16	Aluminum (Al)	Mg/l	APHA-3500 (B)	<2.0	<2.0	<2.0
17	Selenium (Se)	Mg/l	APHA-3113 (B)	<1.0	<1.0	<1.0
18	Cyanide (Cn)	Mg/l	APHA-4500 (C)	N.D.	N.D.	N.D.
19	Copper (Cu)	Mg/l	APHA-3111(B)	0.06	0.07	0.04
20	Magnesium (Mg)	Mg/l	IS:3025 (Pt-45)	9.4	7.75	9.19
21	Manganese(Mn)	Mg/l	APHA-3111(B)	<1.0	<1.0	<1.0
22	Zinc(Zn)	Mg/l	APHA-3111 (B)	0.95	0.79	0.88
23	Cadmium(Cd)	Mg/l	APHA-3111 (B)	<0.001	<0.001	<0.001
24	Lead(Pb)	Mg/l	APHA-3111 (B)	<0.01	<0.01	<0.01
25	Mercury(Hg)	Mg/l	APHA-3112 (B)	<0.001	<0.001	<0.001
26	Nickel (Ni)	Mg/l	APHA-3111 (B)	<0.01	<0.01	<0.01
27	Arsenic(As)	Mg/l	APHA-3500 (B)	<0.01	<0.01	<0.01
28	Chromium (Cr+6)	Mg/l	APHA-3500 Cr-B	<0.01	<0.01	<0.01
29	Phenolic Compound	Mg/l	APHA-5530	<0.001	<0.001	<0.001

	(C6H5OH)					
30	Conductivity (25 °C)	mhos/cm	APHA-2510	556.59	675.83	637.37
31	E. Coli	Coli/100ml	IS:1622-1981	Absent	Absent	Absent
32	Total Coliform	MPN/100ml	IS:1622-1981	Absent	Absent	Absent
33	Temperature	°C	IS:3025 (Pt-9)	19.06	19.61	18.82
34	Sodium (Na)	Mg/l	APHA-3500 (Na)	52.84	33.85	33.53
35	Faecal Coliform	PN/100ml	APHA-9221	Absent	Absent	Absent

Environment Monitoring Plan (post operation)
Monitoring Parameters and Frequency of Monitoring

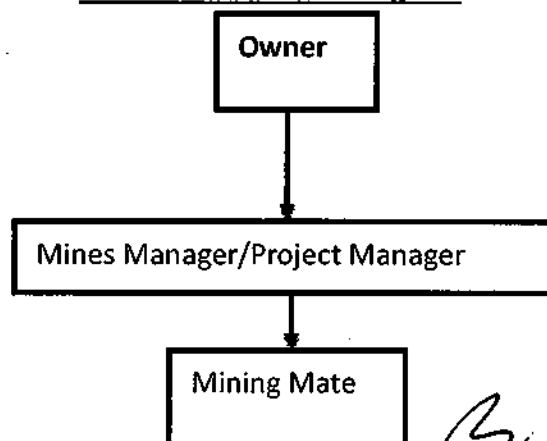
S.no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area in the surrounding area covering project site only.	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Solid Waste Management

During the plan period, about 19,219 m³ of overburden and intercalated waste will be generated. Out of this, 50% (9,610 m³ in-situ) shall be utilized for approach and haul road maintenance. The balance 50% (9,610 m³ in-situ; equivalent to 12,012 m³ loose and 10,210.20 m³ compact waste) will be temporarily dumped in the southern part of the lease area, covering about 0.207 ha.

The dump site has been selected within the lease area ensuring no obstruction to natural drainage. Necessary protective measures such as garland drains, bunds, slope stabilization and plantation will be undertaken as per regulatory norms.

Environment Monitoring Cell



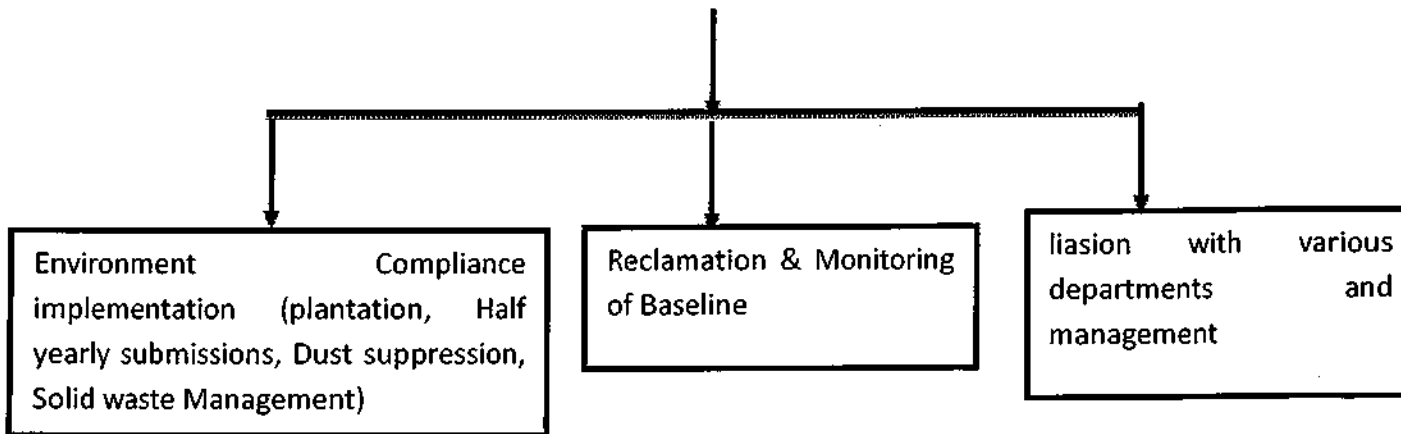


Fig: Organization Chart for Environment Management Cell

Responsibility of Environment Management cell

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to

Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/ loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 09, 10, 11, 12 & 13.09.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.
- III. The impact of the other mine, if any, is to be provided as cumulative impact and corresponding mitigation measures in the final EIA / EMP report. Cluster certificate is also to be obtained from the DMO, Palamau and included in the final EIA / EMP report.

9. Khairidih Stone Mine of M/s Warish Stone (Partner : Md. Shahid Ali), Village : Khairidih, Thana : Dhanwar, Distt. : Giridih, Jharkhand (1.82 Ha).

(Proposal no.: SIA/JH/MIN/ 531846 /2025)

The PAs vide letter dated 09.09.2025, sent through e-mail, have requested for deferment of the consideration of the proposal to the next meeting of SEAC.

Hence, the proposal will be taken up for consideration in the next meeting.

**10. Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Bhagwan Bhagat),
Mauza : Kordar, Thana : Taljhari, Anchal : Pathna, Distt. : Sahibganj, Jharkhand (2.835 Ha).**

(Proposal no.: SIA/JH/MIN/ 550341 /2025)

Name of the consultant : New Vision Earth Consultancy OPC Pvt. Ltd., Ranchi, Jharkhand.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/118, dated 26.12.2016 for Capacity- 107646 TPA.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 10.09.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ -96 µg/m³ PM_{2.5} -567 µg/m³ SO₂ -18.2 NO₂ - 19.0 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1269/M, dated 10.07.2025 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by Regional Office, MoEF&CC, Govt. of India vide F.No. 111-12/ROR-2025/246, dated 22.04.2025 and Action taken report is submitted along with self-certified compliance report submitted to SEAC Committee.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity: 39800 cum per year & 107461 tonnes per Year.

Project & Location Details

Parameter	Details
Project Name	Kordar Stone Mine
Project Location	Mauza: Kordar, Thana Taljhari Anchal Pathna District Sahebganj Jharkhand
Lessee:	M/s Mahadev Black Stone Company

	Partner-Sri Bhagwan Bhagat& Sri Vikram Pratap	
Lessee Address	At Ratanpur, P. S+PO-Barharwa, District-Sahebganj, Jharkhand	
Lease Area	2.835Ha	7.00 Acres
Type of Land	Non-Forest Raiyati Land	
Project Cost	Capital: Rs. 97,19,120	Recurring: Rs 18,14,000
EMP Budget	Capital: Rs. 15,05,250	Recurring: Rs 6,14,000
New or Expansion	Reappraisal of EC	
Mineable Reserves	1819290 Tonnes	
Mine Life	17 Years	
Man power	21	
Water Requirement	11.735 KLD	
Water Source	Water tankers	
DG Set / power	1 DG Set (25 KVA)	
Crusher	Not Proposed	
Nearest Water Body	The Ganga River 15 Km Eastern side of lease area	
Nearest Habitation	Barharwa 3 Km	
Nearest Rail Station	Bakudi Railway Station-2.6 Km	
Nearest Air Port	Deoghar Airport 129.1 Km	
Nearest Forest	Divisional Forest Officer, Sahebganj certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.	
Road & Highways	NH-33 Sahebganj-Barharwa road is 2.7Km away from the applied lease area in northern side.	
Approach Road	The distance of approach road is 180 m	

CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
BM01	24° 54' 52.584" N	87° 45' 19.783" E
P1	24° 54' 50.873" N	87° 45' 19.851" E
P2	24° 54' 51.821" N	87° 45' 21.092" E
P3	24° 54' 53.184" N	87° 45' 22.286" E
P4	24° 54' 54.473" N	87° 45' 23.252" E
P5	24° 54' 55.783" N	87° 45' 24.559" E
P6	24° 54' 56.915" N	87° 45' 25.546" E
P7	24° 54' 58.435" N	87° 45' 26.873" E







P8	24° 54' 57.969" N	87° 45' 27.757" E
P9	24° 54' 56.990" N	87° 45' 26.887" E
P10	24° 54' 55.934" N	87° 45' 26.118" E
P11	24° 54' 55.336" N	87° 45' 27.744" E
P12	24° 54' 54.815" N	87° 45' 29.678" E
P13	24° 54' 54.217" N	87° 45' 31.185" E
P14	24° 54' 52.881" N	87° 45' 30.265" E
P15	24° 54' 53.184" N	87° 45' 29.029" E
P16	24° 54' 52.524" N	87° 45' 28.747" E
P17	24° 54' 52.639" N	87° 45' 27.862" E
P18	24° 54' 52.092" N	87° 45' 26.275" E
P19	24° 54' 51.234" N	87° 45' 23.682" E
P20	24° 54' 50.434" N	87° 45' 21.155" E
P21	24° 54' 49.579" N	87° 45' 18.266" E

LAND DETAILS

Khata no.	Plot no.
05	17 & 22 (P)
12	01 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 07.06.2022 ot 06.06.2032.
2	CO	:	The CO, Patna, Sahibganj vide memo no. 316, dated 25.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatian.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 1649/M, dated 08.09.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 3315, dated 23.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 50, dated 08.01.2016 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. no. 36, Page no. 132).
7	Gram Sabha	:	Gram Sabha conducted on 21.12.2021.

8	Scheme / Mine Plan Approval	:	i. Mining plan approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 291/DDM, dated 23.12.2024. ii. Mining plan approved by DMO, Sahibganj vide letter no. 1270/M, dated 10.07.2025.
9	Previous Environmental Clearance (EC)	:	i. Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/118, dated 26.12.2016. ii. Transfer of EC granted by SEIAA, Jharkhand vide letter no. 308, dated 23.07.2025.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Regional Office, MoEF&CC, Govt. of India vide F.No. 111-12/ROR-2025/246, dated 22.04.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1243002/2017/434, dated 09.08.2017.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-3825001/2018/245, dated 01.11.2018.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1269/M, dated 10.07.2025.
14	Grid certificate	:	DMO, Sahibganj vide memo no. 1650/M, dated 08.09.2025 certified that said project falls under grid no. 98 and production is within the over all permissible production limit. The DMO also stated that this certificate is issued in the light of order passed by Hon'ble NGT on 22.12.2021 in OA No. 23/2017/EZ, O.A. no. 776/2018 and O.A. no. 373/2019. It also states this certificate is issued in compliance of report of Expert Committee.
15	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	Opencast Semi-Mechanized method
2	Quarry Area	:	2.070 Ha
3	Waste Generation	:	22034 cum
4	Stripping Ratio(t/m ³)	:	1:0.19
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m

7	Highest Elevation of lease Area	:	132 m above MSL
8	Lowest Elevation of lease Area	:	99m above MSL
9	Ultimate Working Depth	:	67 m above MSL
10	Water Table	:	50 m above MSL
11	Topography of Mine	:	Area represents hillocks of basalt
12	Explosive Requirement	:	Approx. 400 Kg/day (Blasting will carry out by DGMS authorized agency)
13	Diesel/Fuel requirement	:	250 Litres per day

PRODUCTION DETAILS

Year	Production of Stone		Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
	In Cum	In Tonnes			
2025-26	39800	107461	17850	2095	19945
2026-27	39701	107191	0	2090	2090
Total	79501	214652	17850	4184	22034

LAND USE

Land Utilization	Existing Land use (Ha)	At the end of plan Period (ha)	At Conceptual period (Ha)
Excavation	1.335	1.754 (0.179 ha area of safety zone shall be backfilled)	2.070 (0.427ha area shall be backfilled, 1.373 ha area shall be converted into water reservoir and 0.270 ha left as dead benches).
Waste Dump	0.0	0.200	0.00 (Comes under quarry)
Road	0.074	0.018	0.00 (Comes under quarry)
Infrastructure	0.00	Nil	Nil
Safety Zone Barrier	0.586	0.586	0.765 (0.179 ha excavated part of safety zone shall be backfilled and restored)

Total	1.995	2.558	2.835
Unused Area	0.840	0.277	0.00
Total Lease Area	2.835		

ENVIRONMENTAL MANAGEMENT

Greenbelt

Year	Area for greenbelt in Ha	No of plants
2025-26	0.179 (Backfilled safety zone)	448
	0.586 (Barren safety zone)	1465
	0.427 Backfilled quarry at ultimate stage	1068
	0.270 area of dead benches at ultimate stage	675
	0.765	3655
	Trees on Approach Road (180 m)	360
	Total	4015
Plant Species: Jackfruits, Arjuna, Akashmani, Neem, Sheesham, Mango etc		

Environment Management Budget

Mitigative measures to protect Environment	Capital	Recurring
Tree Plantation (3655 plants proposed for greenbelt development cost of per plant would be @350 Rs, so total cost for plantation would be $4015 \times 350 = 1405250$ Rs) (Fertilizer, labour & maintenance Cost @800rs per day & 300 working days = $300 \times 800 = 240000$)	1405250	240000
Water Tanker for Dust Suppression, watering plants (Rs 1000/day & 300 working day)	0	3,00,000
Garland Drain & Parapet wall (Maintenance Rs 2000/month)	1,00,000	24000

Environment Monitoring & Compliance (Six Monthly)	0	50000
Total	1505250	614000
Grand Total	2119250	

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	3 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 stations	Six Monthly

Solid Waste Management

- 22034 O.B will be used in maintenance of mine road and left-over O.B will be used for backfilling.
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Water Quality Management

- No ground water is used for Mining purpose.
- Rainwater collected within the quarry will be directed to a collection pit and regularly pumped out during rainy season.
- Pumped water will be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.

- Garland drains will be constructed along the quarry boundary to divert runoff safely into natural streams.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting

Air Quality Management

Drilling Operations-Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

- Use of sharp drill bits to minimize dust.
- Wet drilling techniques will be adopted by injecting water at the drilling point.
- **Blasting Activities**
 - Controlled blasting using optimal quantities of explosives will be practiced only during daytime and favourable weather.
 - Proper public notification will be made in nearby habitations before blasting.
- **Machinery Emissions**
 - Diesel-operated machinery and vehicles will be regularly serviced to control gaseous emissions.
- **Dust Control**
 - Water sprinkling before loading blasted material and a long-haul road.
 - Regular road maintenance will be undertaken to reduce dust dispersion.
 - All trucks leaving the lease area will carry a valid PUC certificate.

Risk Assessment & Mitigation

Risk assessment indicates that stone mining activities fall under medium to low risk, making them acceptable.

Hazard identification & Risk Analysis in Stone Mining operation-

S.No	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading	Very Unlikely	Minor	20

		material, Exposure to Dust			
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive measures:

- **Slope Failure & Bench Stability-**

- Avoid creating excessive bench heights.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

- **Drilling Operations-**

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling

Falls from the edge of a bench

Workers can fall from the edge of working and abandoned bench which can lead to serious injury of worker. During drilling operation working on the edge would be in risk. Sometime drilling machine would be worked malfunction and lead to serious injury to involved workers.

Control Measures:

- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Person in charge of drilling machine should be trained & instruct properly.
- Time to time ensured that the drilling machine is suitable for working.
- Restricted access to the area to all persons except those persons who are responsible for the drilling operation.
- Train drivers and operators for safe equipment handling.
- Install warning signs and provide stopper guides at reversing points.

Dust generation during drilling

During drilling dust particles are generated which are hazard for inhalation.

Control measures:

- Wet drilling will be carried out which prevents dust generation.
- Drilling machine should be fitted with dust suppression, collection & disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation due to drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

Control measures:

- Noise of drilling machine Continuously measured and sound insulated operation cabins used.
- Older machine which produced large amount of sound should be replaced by newer machine.
- Provide training to operators and providing ear protection to minimize the loss of hearing or damage of ears.

Operation & Safety Measures

During Blasting Operations

Most of the accidents happen during blasting due to the projectiles and mainly during overcharging. Flying of rocks are happened during initial and final blasting operation. Noise pollution and dust is generated during blasting process.

Control Measures:

- Blasting will be done by DGMS approved authorised agency.
- Permissible explosives should be used for blasting.
- Blasting will be done only during favourable weather conditions and only during day time or permissible hours.
- Before Blasting, proper announcement will be done by sirens.
- Restrict entry in the area other than authorised person.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations.

Control Measures:

- Explosives are not stored in the mining area. It is stored in the permissible place which are approved by DGMS agency.
- Explosive will be used and handled only by approved persons.
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health & Safety Measures:

Health hazard can be impacted by air pollution due to dust generation, Noise pollution due to drilling & Blasting.

Control Measures:

- Provide PPE including dust masks, respirators, ear protection, and safety clothing.
- Conduct regular health check-ups for workers.

Transportation Safety

- All internal haul roads will be regularly levelled, widened, and cleaned.
- Two-way traffic lanes will be maintained with proper signages.
- Vehicles will be checked monthly for fitness and operated by trained drivers only.
- Speed limits will be enforced and overtaking prohibited inside the lease area.
- Overloading should be probated.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Bhagwan Bhagat), Mauza : Kordar, Thana : Taljhari, Anchal : Pathna, Distt. : Sahibganj, Jharkhand (2.835 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. That the Deputy Commissioner, Sahibganj will ensure compliance of the order passed by Hon'ble NGT in OA No. 23/2017/EZ, O.A. no. 776/2018 and O.A. no. 373/2019 in the matter of Syed Arshad Nasar Vs Union of India with Ramchandra Chaurasia Vs State of Jharkhand with Pradeep Kumar Singh Vs State of Jharkhand before grant of mining lease.
- II. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
- III. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- IV. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- V. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- VI. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VII. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

Day 3 : 11th, 2025 [Thursday]

Consideration of proposals :

1. Residential Building "Eklavya Skybay" of M/s Eklavya Projects Pvt. Ltd., Village : Balalong, Thana : Nagri, Tehsil : Ranchi, Distt. : Ranchi, Jharkhand.

(Proposal no.: SIA/JH/INFRA2/ 550431 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 8(a) Building and Construction Projects , Category: B2.

Application for Environmental Clearance (EC) as per EIA notification, 2006.

Built-up Area: 26587.02 sq. meter

PROJECT And LOCATION Details:

Parameters	Description
Total Plot Area	5572.96 Square meter
Project Cost	INR 41Crores
F.A.R(Permissible)@3.3	18390.768sq. m.
(Proposed FAR @3.29-	18352.92Sq. Meter
Green Area (@ 5% of plot area)	278.648Square Meter
Green Belt @ 15 % of net plot area	835.944Sq. Meter
Population	1280
Water Requirement	132KLD
Fresh Water Requirement	91KLD
Wastewater Generation	111 KLD
STP	150KLD
Total Municipal Waste	593kg/day
Bio Medical Waste	Nil
Power Requirement	Maximum power demand for the project during operation phase is estimated to be 1500kVA. Source of power will be Jharkhand State Electricity Board.
DG Sets	1 no. of DG set of Total 500 KVA
RWH Pits	4 nos.

Parking Area	6235.97 square meter
Nearest Road	NH-39 approx. 0.11km in West direction
Nearest Railway Station	Hatia Railway Station at approx. 6.66 km, in East direction.
Nearest Airport	Birsa Munda Airport, Ranchi is at distance of 8.46 km in ENE direction.
Nearest Hospitals	Paras HEC Hospitals, Ranchi approx 3.50 km East Direction.
Nearest Water Bodies	Dhurwa Dam approx 1.38 km SE Direction. Ranchi Lake 10.13 km, NE Direction.

CO-ORDINATES

Point	Latitude	Longitude
A	23°18'28.24"N	85°14'32.45"E
B	23°18'29.10"N	85°14'32.56"E
C	23°18'29.77"N	85°14'32.79"E
D	23°18'27.87"N	85°14'33.77"E
E	23°18'27.47"N	85°14'36.27"E
F	23°18'28.86"N	85°14'36.48"E

AREA STATEMENT

S. No.	Description	Area (sq m)/ m
1.	Plot Area	5572.96
2.	Ground Coverage @34.50%	1867.83
3.	Buildup area without basement	22432.39
4.	Buildup area with basement	26587.02
5.	Total open space	3705.13
6.	FAR (Permissible)@ 3.3	18390.768
7.	Proposed FAR @3.29	18352.92
8.	Parking area	6235.97
9.	Internal road	1235.4
10.	Green Area (@20 % of net plot area)	1114.592

11.	Green Belt @ 15 % of net plot area	835.944
12.	Nos. of Dwelling units Residential	196
13.	Height (m)	42

LAND DETAILS

Khata no.	Plot no.
35	796

Water Requirement Details

Category	Population/Area (sq m)/Capacity	Standard (LPCD)	Water Requirement- KLD	Fresh Water Requirement- KLD	Recycled Water requirement- KLD
Domestic					
Residents	1113	100	111	78	33
Staff	56	45	3	2	1
Visitors	111	15	2	1	1
Total Domestic Water Demand			116	81	35
Swimming Pool	150 cum		10	10	0
Landscape	1114.59sq m	3 liter/square meter	4	0	4
Fire Fighting	--	--	2	0	2
Total	--	-	132	91	41

Wastewater Calculations

Category	Total Quantity (KLD)
Fresh water Req.	81
Swimming Pool	10

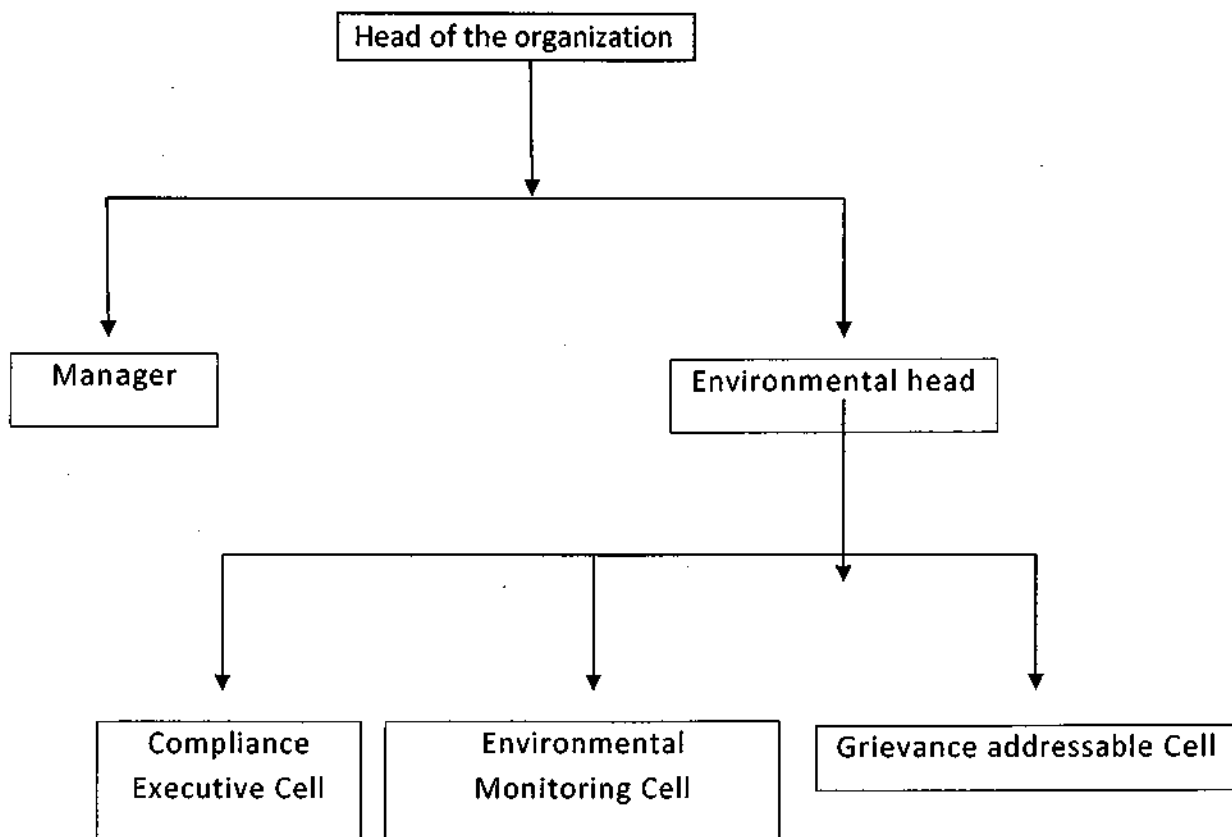
Flushing water Req.	35
Sewage generation (@80% of the fresh water consumption + 100% flushing water)	108
Capacity of STP	150
Recovered water from STP (90% of Waste water)	98
1. Flushing	35
2. Landscaping	4
3. Fire Fighting	2
4. Discharge to Sewer	57

Solid Waste Generation

S. No	Description	Occupancy/Area	kg/capita/day	Total Solid Waste Generation (kg/day)	Dry Waste (Kg/day)	Wet Waste (kg/day)
1.	Residents	1113	0.5	557	334	223
2.	Staff	56	0.25	14	8	6
3.	Visitors	111	0.15	17	10	7
4.	STP sludge	98 KLD Sewage	--	9	0	9
Total Waste Generated				597	352	245

EMP Cost – Approx. Budget Operational Phase:

S. No.	Activity	Capacity/ Area/Nos./parameters	Capital Cost (Lacs)	Annual Recurring Cost (Lacs)
1.	STP	150 KLD	25	2
2.	Landscaping & planting trees	11144.59 sq m	10	2
3.	Solid waste Management	Municipal waste-245 kg/day for OWC	15	1
4.	RWH Pit Installation	4 pits	5	1
5.	Energy Saving	5 %	20	4
6.	Environmental Monitoring*	Air, water, soil and noise	-	2
7	Total		75	12



Organization Structure

ENVIRONMENT MANAGEMENT

Green Belt Development

- Combination of local trees and shrubs are planned within the project site.
 - Total green belt provided at the site is 835.944sq m (15% of the plot area)&Green Area is 278.648sq m (@5 % of net plot area)which will enhance the beauty of the site and help combat air and noise pollution.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.
- **Environment Monitoring Programme**

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

During Construction Phase

- Construction yards are proposed for storage of construction material.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the project.
- Remaining soil will be utilized for refilling/road work/raising of site level at locations.
- There will be "Refuse Containers" at site for the management of domestic waste generated by the construction labourers and these containers will be emptied at least once daily.
- Cement bags, waste paper and packing material (cardboard) will be sold off to recyclers.

During Operation Phase

- The solid waste will be segregated at source & collected.
- Adequate number of colored bins (green, white & Black) separate for bio-degradable, non-biodegradable and Hazardous waste are proposed to be provided at the strategic location within site.
- Bio-degradable (will be composted through organic waste converter).
- Recyclable wastes will be disposed to govt. or SPCB approved third party vendors.
- Dewatered sludge can be buried underground in a sanitary landfill. It also may be spread on agricultural land in order to make use of its value as a soil conditioner and fertilizer.
- The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.
- Horticultural Waste is composted and used for gardening purposes.

Water Quality Management

During Construction Phase

- The site drainage will be planned in such a way that there is no accumulation of water/wastewater within the project premises or in the vicinity of the site.
- Mobile toilets to be provided for construction Laborers.
- Generated waste water will be collected through tankers and dispose to septic tank for treatment.

During Operation Phase

- STP of capacity i.e. 150KLD or STP is proposed for treatment of wastewater.
- Treated waste water would be reused for Flushing, Landscaping, Road Washing & Misc
- Use of water efficient plumbing fixtures to conserve water.
- Approx. 81KLD of fresh water is required during operational phase of the project.

Air Quality Management

- Warehouse/stock yard will be provided for storage of construction material
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.

- Covering of trucks carrying construction materials.
- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles.
- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

Energy conservation

- Energy will be conserved via solar power & LED of at least 5 % of the total power requirement.

Undertaking

- An undertaking that 89KLD recycles wastewater generated at Proposed Residential Building “ Eklavya Skybay” at Khata No.- 35, Plot No.- 796, Thana No-236, at Village-Balalong, Thana-Nagri, District Ranchi, Jharkhand.
- An undertaking that 1500kVA Power requirement in Proposed Residential Building “ Eklavya Skybay” at Khata No.- 35, Plot No.- 796, Thana No-236, at Village-Balalong, Thana-Nagri, District Ranchi, Jharkhand.
- An undertaking that no ground water will be used with any prior approval from CGWA.

Statutory Clearances :

1	Land Docs	:	Development agreement with land owner has been executed.
2	DFO Territorial	:	DFO, Ranchi Forest Division vide letter no. 2408, dated 13.08.2025 certified that the distance of reserved / protected forest is more than 250 meters from project site.
3	DFO Wildlife	:	DFO, Wildlife Division, Ranchi vide letter no. 526, dated 07.08.2025 certified that proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
4	CO certificate	:	The CO, Nagri, Ranchi vide letter no. 900 (ii), dated 26.07.2025 has mentioned the plot no. of the project is not recorded as “Jangle - Jhari” in R.S. Khatiyan.
5	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC /EAST /B/ 060825/1759471, dated 20.08.2025 valid up to 19.08.2033.
6	Building Plan approval	:	Conceptual Plan submitted.

7	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 4233/Tech./2025, dated 20.06.2025.

Based on the presentation made and information provided, the Committee decided that the proposal for Residential Building "Eklavya Skybay" of M/s Eklavya Projects Pvt. Ltd., Village : Balalong, Thana : Nagri, Tehsil : Ranchi, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure -IV alongwith the following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- IV. All raw material to be stored only under covered shed.
- V. PAs to offset (up to 20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- VI. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load.
- VII. Trees should be developed & maintained not less than 15% of project area.
- VIII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- IX. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- X. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.
- XI. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.
- XIII. Sufficient number of EV fast charging points to be installed.

- XIV. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.
- XV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

**2. Residential cum Commercial Project "Royal Palms" of M/s Loyala Maurya Estates Pvt. Ltd.,
Mouza : Pundag, Town : Ranchi, Distt. : Ranchi, Jharkhand.**

(Proposal no.: SIA/JH/INFRA2/ 550348 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 8(b) Township and Area Development Project, Category: B1.

Application for Environmental Clearance after Terms of Reference (ToR) as per EIA notification, 2006.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 123rd meeting held on 07.05.2025 - 11.05.2025 and SEIAA, Jharkhand has approved the ToRs in 123rd meeting held on 09th & 10th June, 2025. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2025-26/3686/2025/151, dated 20.06.2025. The final EIA / EMP submitted by PP to SEAC on 05.09.2025.

Built-up Area: 2,24,916 sq. meter

PROJECT and LOCATION Details:

Parameters	Description
Total Plot Area	10.53 Acre or 42616 Square meter
Project Cost	INR 330 Crores
Built-up Area (@3.0 F.A.R)	2,24,916 sq. m.
Green Area (@ 20% of plot area)	8523.20 Square Meter
Population	3939

Water Requirement	414 KLD
Fresh Water Requirement	254 KLD
Wastewater Generation	389 KLD
Treatment facility if waste water	STP of 400 KLD
Total Municipal Waste	1827 kg/day
Power Requirement	Maximum power demand for the project during operation phase is estimated to be 5000 kVA respectively. Source of power will be Jharkhand State Electricity Board.
DG Sets	2 no. of DG set of (2 * 1010 KVA)= 2020 kVA
RWH Pits	20 nos.
Parking Number	Car -799 Two wheeler -900
Nearest Road	Argora Road (approx 0.31 km, East)
Nearest Railway Station	Ranchi Junction Railway station (approx 8.0 km, East)
Nearest Airport	Birsa Munda Airport (Ranchi), (approx 8.41 km, SE)
Nearest Hospitals	Raj Hospital (approx 3.03 km ,East)
Nearest Water Bodies	Dhurwa Dam (approx, 6.50 km, South)

CO-ORDINATES

Point in Image	Latitude	Longitude
A	23°21'14.71" N	85°15'04.94"E
B	23°21'14.13"N	85°15'06.69"E
C	23°21'21.11"N	85°15'08.54"E
D	23°21'25.16"N	85°15'10.15"E
E	23°21'19.37"N	85°15'10.94"E
F	23°21'16.76"N	85°15'11.72"E
G	23°21'22.24"N	85°15'12.77"E
H	23°21'24.47"N	85°15'14.11"E
I	23°21'21.67"N	85°15'14.56"E
J	23°21'21.54"N	85°15'14.97"E
K	23°21'27.14"N	85°15'15.76"E
L	23°21'28.90"N	85°15'16.20"E

M	23°21'26.66"N	85°15'17.00"E
N	23°21'25.60"N	85°15'18.44"E
O	23°21'28.31"N	85°15'19.42"E

LAND DETAILS

Khata no.	Plot no.
6, 106, 263, 491, 290, 247, 178, 92 & 108	118, 119, 59, 65, 62, 60, 75, 78, 79, 80, 81, 67, 70, 71, 72, 73, 74, 76, 92, 93 & 94

AREA STATEMENT

S. No.	Description	Proposed area after expansion (sq m)
1.	Plot Area	42616
2.	Net Plot area	42616
3.	Ground Coverage (@33 %	14063.28
4.	FAR @3.091	131726
5.	Non-FAR Area including basement area	93190
6.	Built-up Area	2,24,916
7.	Green Area (20%)	8523.2
8.	Green belt (15 %)	6392.4
9.	Area of Internal Road	10010
10.	Pavement Area	2500
11.	Height	40meter

Water Requirement Details

Category	Population/Area (sq m)/Capacity	Standard (LPCD)	Water Requirement (KLD)	Fresh Water Requirement (KLD)	Recycled Water requirement(KLD)
Domestic (Residential)					
Residents	3295	100	330	231	99
Staff	165	45	8	6	2
Visitors	329	15	5	3	2
Domestic (Hotel)					

Residents	86	180	16	11	5
Staff	55	45	3	2	1
Visitors	9	15	2	1	1
Total Domestic Water Demand			364	254	110
Landscape	8523.2 Sq.m	3ltr/sqm	25	-	25
DG Cooling		0.9l/KVA/hr	15	-	15
Fire Fighting			10	-	10
Total			414	254	160

(D.G. sets operation period is 8 hrs.)

Wastewater Calculations

Category	Total Quantity (KLD)
Domestic water Req.	414
Flushing water Req.	160
Sewage generation (@90% of the fresh + 100% flushing water requirement)	389
Capacity of STP	400
Recovered water from STP (90% of Waste water)	350
1. Flushing	160
2. Landscaping	25
3. Fire Fighting	15
4. DG Cooling	10
5. Discharge to Sewer/Road/Car washing	140

Solid Waste Requirement

S. No	Description	Occupancy/Area	kg/capita/day	Total Solid Waste Generation (kg/day)	Recyclable (kg/day)	Non Recyclable (kg/day)
1.	Residents	3381	0.5	1690	1352	338
2.	Staff	220	0.25	55	44	11
3.	Visitors	338	0.15	51	41	10
6.	Landscape waste	8523.2 SQM i.e 2.10 acres	0.2 kg/acres	0.42	0.42	--
7.	STP sludge	389 KLD	--	30	30	--

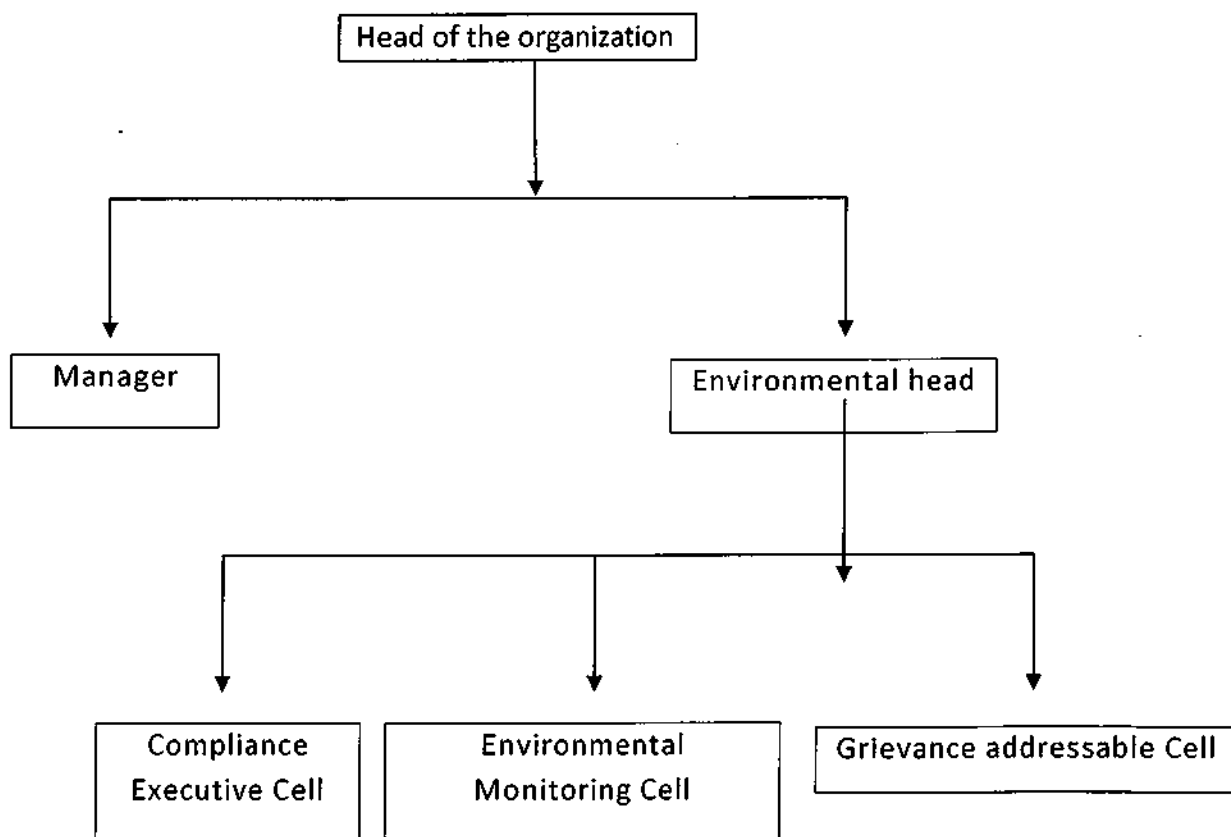
Total Waste Generated	1827	1468	359

Summary of Baseline Data

Parameter	No. of Locations	Environmental Baseline Study
Ambient Air Quality Monitoring	8 locations	PM2.5- 27.79 $\mu\text{g}/\text{m}^3$ to 46.07 $\mu\text{g}/\text{m}^3$ PM10- 64.08 $\mu\text{g}/\text{m}^3$ to 85.87 $\mu\text{g}/\text{m}^3$ SO2- 5.28 $\mu\text{g}/\text{m}^3$ to 9.09 $\mu\text{g}/\text{m}^3$ NO2- 11.50 $\mu\text{g}/\text{m}^3$ to 18.18 $\mu\text{g}/\text{m}^3$
Noise level monitoring	8 locations	During daytime- 48.6 dB (A) to 57.2 dB (A) During Night time- 36.8 dB (A) to 44.8 dB (A) Results were found within permissible limits
Water samples	Surface water – 2 locations	All parameters like Dissolved Oxygen (6.7 to 6.8 mg/l), pH (7.49 to 7.80), Chloride (36.0 to 74.2mg/l) etc. are found within permissible limits
	Ground water- 5 locations	All parameters like TDS (512 mg/l to 710mg/l), pH (7.08 to 7.60), Hardness (175 mg/l to 220mg/l) etc. are found within permissible limits & fit for consumption.
Soil Samples	5 locations	pH- 7.21 to 8.23 Conductivity- 360.0 to 521.0 $\mu\text{mhos}/\text{cm}$

Need Based Socioeconomic Survey

S. No.	Community Priority	Status	Need of the Community	Yearly Budget, Rs. In lacks
1.	Education	Moderate	School building construction and stationary distribution	1.50
2.	Medical Facilities	Very Poor	Health Camp for routine check-up, and medicine distribution	2.00
3.	Drinking Water	Average	Hand Pump and Bore wells required	1.50
4.	Social Issues	Un-employment	Employment will be given to local people during construction phase.	*
Total				5.00



Organization Structure

ENVIRONMENT MANAGEMENT

Green Belt Development

- Combination of local trees and shrubs are planned within the project site.
- Total green area provided at the site is 8523.2 sq m (20 % of the plot area) which will enhance the beauty of the site and help combat air and noise pollution.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.

COST PROPOSED FOR EMP

S. No.	Activity	Capacity/ Area/Nos./parameters	Capital Cost (Lacs)	Annual Recurring Cost (Lacs)
1.	STP	400 KLD	40	15
2.	Landscaping & planting trees	8523 sq m	15	5
3.	Solid waste Management	Municipal waste-1827 kg/day	30	15
4.	RWH Pit Installation	20 pits	25	10
5.	Energy Saving	10 %	40	4

6.	Environmental Monitoring*	Air, water, soil and noise	-	2
Total			150	51

• **Environment Monitoring Programme**

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

During Construction Phase

- Construction yards are proposed for storage of construction material.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the project.
- Remaining soil will be utilized for refilling/road work/raising of site level at locations.
- There will be "Refuse Containers" at site for the management of domestic waste generated by the construction labourers and these containers will be emptied at least once daily.
- Cement bags, waste paper and packing material (cardboard) will be sold off to recyclers.

During Operation Phase

- The solid waste will be segregated at source & collected.
- Adequate number of colored bins (green, white & Black) separate for bio-degradable, non-biodegradable and Hazardous waste are proposed to be provided at the strategic location within site.
- Bio-degradable (will be composted through organic waste converter).
- Recyclable wastes will be disposed to govt. or SPCB approved third party vendors.
- Dewatered sludge can be buried underground in a sanitary landfill. It also may be spread on agricultural land in order to make use of its value as a soil conditioner and fertilizer.
- The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.
- Horticultural Waste is composted and used for gardening purposes.

Water Quality Management

During Construction Phase

- The site drainage will be planned in such a way that there is no accumulation of water/wastewater within the project premises or in the vicinity of the site.
- Mobile toilets to be provided for construction Laborers.
- Generated waste water will be collected through tankers and dispose to septic tank for treatment.

During Operation Phase

- STP of capacity i.e. 400 KLD or STP is proposed for treatment of wastewater.
- Treated waste water would be reused for Flushing, Landscaping, Road Washing & Misc
- Use of water efficient plumbing fixtures to conserve water.
- Approx. 254 KLD of fresh water is required during operational phase of the project.

Air Quality Management

- Warehouse/stock yard will be provided for storage of construction material
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.
- Covering of trucks carrying construction materials.
- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles.
- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

Energy conservation

- Energy will be conserved via solar power & LED of at least 5 % of the total power requirement.

Undertaking

- An undertaking that 350 KLD recycles wastewater generated at Residential cum commercial project "Royal Palm" of M/s Loyala Maurya Estate Pvt. Ltd at plot no. 118,119,59,65,62,60,75,78,79,80,81,67,70,71,72,73,74,76,118,119,92,93,94, khata no 56, 106,263,491,290,247,172,92,108 at Mauza Pundag, Town-Ranchi, District-Ranchi, Jharkhand.
- An undertaking that 5000 kVA Power requirement in Residential cum commercial Project "Royal Palm" located in Ranchi City of M/s Loyala Maurya Estate Pvt. Ltd at plot no. 118,119,59,65,62,60,75,78,79,80,81,67,70,71,72,73,74,76,118,119,92,93,94, khata no 56, 106,263,491,290,247,172,92,108. at Mauza Pundag, Town-Ranchi, District-Ranchi, Jharkhand.
- An undertaking that no ground water will be used with any prior approval from CGWA.

Statutory Clearances :

1	Land Docs	:	Joint development agreement.
2	DFO Territorial	:	DFO, Ranchi Forest Division vide letter no. 85, dated 09.01.2025 certified that the distance of reserved / protected

			forest is more than 250 meters from project site.
3	DFO Wildlife	:	DFO, Wildlife Division, Ranchi vide letter no. 962, dated 05.12.2024 certified that proposed project site is out side Eco Sensitive Zone of Palkot Wildlife Sanctuary.
4	CO certificate	:	The CO, Nagri, Ranchi vide letter no. 137 (ii), dated 30.01.2025 has mentioned the plot no. of the project is not recorded as "Jaugle - Jhari" in R.S. Khatyan.
5	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC /EAST /B/ 060822/676382, dated 23.06.2022 valid up to 22.06.2030.
6	Building Plan approval	:	Conceptual Plan submitted.
7	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 2724/Tech./2020, dated 14.12.2020.
8	Baseline study period	:	March, 2025 to May, 2025.

Based on the presentation made and information provided, the Committee decided that the proposal for Residential cum Commercial Project "Royal Palms" of M/s Loyala Maurya Estates Pvt. Ltd., Mouza : Pundag, Town : Ranchi, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –IV alongwith the following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- IV. All raw material to be stored only under covered shed.
- V. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.

- VI. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load.
- VII. Trees should be developed & maintained not less than 15% of project area.
- VIII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- IX. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- X. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.
- XI. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.
- XIII. Sufficient number of EV fast charging points to be installed.
- XIV. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.
- XV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

3. Dundu Stone Deposit of Md. Mustafa, Village : Dundu, Thana : Manika, Distt. : Latehar, Jharkhand (2.72 Ha).

(Proposal no.: SIA/JH/MIN/ 549606 /2025)

Name of the consultant :P & M Solution, Noida, U.P.

This is an expansion project which has been listed for consideration on 11.09.2025. This project has been taken up on 13.09.2025 as the PAs were asked to submit a fresh action taken report to Regional Office of MoEF&CC, Govt. of India with a copy to SEAC.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

Dundu Stone Deposit has been previously granted for Environment clearance on 13.12.2024 with production capacity 21262.9 cum/annum or 57409.83 TPA.

Earlier EC has been appraised by SEIAA Jharkhand vide letter no. EC/SEIAA/2024-25/3297/2024/361 dated 13.12.2024 on the same capacity mentioned in EC i.e.21262.9 cum/annum or 57409.83 TPA. Although mining scheme has been approved for the of 70055 cum/annum or 189148 TPA at the appraisal for EC.

Now, the proposal has been applied for the Environmental Clearance (Expansion, Category B2) under production capacity of 70055 cum/annum or 189148 TPA TPA within same mining lease area on the same mining scheme approved on 20.02.2025 via letter no. 225/Mining.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Dundu Stone Deposit
2	Lessee:	:	Md. Mustafa R/O- Village- Tarwadih, P.O. –Nawagarh, P.S. - Latehar, District - Latehar, State – Jharkhand
3	Lease Address	:	Mouza - Dundu, Thana - Manika, District – Latehar, State- Jharkhand
4	Lease Area	:	2.72 ha Acres 6.72 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)
6	Project Cost	:	Rs. 1.30 Cr
7	EMP Budget	:	Capital: Rs.20.58 Lakhs Recurring: 9.05 Lakhs / year
8	New or Expansion	:	Expansion
9	Mineable Reserves	:	756029 tons 280010.74cum
10	Mine Life	:	Up to the lease period i.e. 17.10.2017 to 16.10.2027.
11	Man power	:	40
12	Water Requirement	:	13.80 ~ 14.00 KLD (Drinking: 0.40 KLD, Dust Suppression: 6.68 KLD, Plantation: 6.72 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	500 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Sukri River, Approx. 0.11 km towards south direction of mine site EMP Submitted.
17	Nearest Habitation	:	Dundu, Approx. 0.10 km towards NW directionas per Google Earth EMP has been submitted.
18	Nearest Railway Station	:	Kumandih Railway station, approx. 7.39 km towards SW direction.
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi approx. 107.26 km towards ESE direction.

20	Nearest Forest	:	Fairly Dense Mixed Jungle, Approx. 0.30 km towards ENE direction of mine site. Reserved Forest, Approx. 1.25 km towards SW direction of mine site.
21	Road & Highways	:	NH-39, Approx.1.27 km. in WSW direction.
22	Approach Road	:	Approx 630 meter

CO-ORDINATES

1	Latitude	:	From 23°48'38.89588" N	To 23°48'45.67086" N
2	Longitude	:	From 84°24'56.32722" E	To 84°25'04.03849" E

LAND DETAILS

Khata no.	Plot no.
322	1054

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease Deed :17.10.2017 to 16.10.2027.
2	CO	:	The CO, Manika vide letter no. 393, dated 13.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO	:	DMO, Latehar vide memo no. 766/M, dated 28.08.2024 certified that 01 other mining lease area (5.18 Acre) exists within 500 m radius from proposed project site and total area is 11.90 Acre.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 782, dated 02.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Divisional Forest Officer, Latehar Forest Division vide letter no. 1916, dated 06.09.2016 certified that the distance of notified forest is 300 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Latehar District (Sl. no. 09, Page no. 17).
7	Gram Sabha	:	Gram Sabha conducted on 08.08.2016.

8	Mine Plan / Scheme Approval	:	Minning scheme approved by AMO –cum- Incharge DMO, Latehar vide memo no. 225/Mining, dated 20.02.2025.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mining scheme has been prepared by him.
10	Production Report	:	Production figure issued by DMO, Latehar vide memo no. 968/M, dated 23.10.2024.
11	Compliance report of previous EC	:	Compliance report of previous EC certified by Regional Office, MoEF&CC, Govt. of India vide F. No.111-20/ROR-2025/438, dated 24.07.2025.
12	Previous Environmental Clearance (EC)	:	i. Previous EC granted by DEIAA, Latehar vide letter no. 32 EC/DEIAA/2017, dated 22.04.2017. ii. EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3297/2024/361, dated 03.12.2024.
13	Consent to Estblsh (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-3950441 /2018/1265, dated 18.12.2018.
14	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTO-19228397 /2024/97, dated 13.06.2024.

Working Details

1	Mining Method	:	Opencast mechanized mining method
2	Quarry Area	:	2.72 hectare or 6.72 Acres Life of Mine – Up to the lease period i.e. 17.10.2017 to 16.10.2027.
3	Waste Generation	:	Total 8440 cum gritty soil & 14735 cum intercalated waste will be generated during plan period.
4	Stripping Ratio	:	1:0.30
5	Working Days	:	300
6	Benchs: size & No	:	6m x6m
7	Elevation of Mine	:	352 AMSL to 350 AMSL
8	Ground Level Elevation	:	350 AMSL
9	Ultimate Working Depth	:	310 AMSL (40 mbgl)
10	Water Table	:	303-294AMSL (47-56mbgl)
11	Topography of Mine	:	Area an almost flat land with two hillocks.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	130 litre/day

Production Details

Year	Proposed Production of Stone in Cum	Proposed Production of Stone in Tons	Removal of Gritty Soil		Intercalated waste	Bench mRL
			In cum	In tonnes	In cum	
1 st	69960	188887	5588	8382	3682	358-340
2 nd	70055	189148	2236	3354	3687	352-334
3 rd	70011	189030	616	924	3685	346-328
4 th	69946	188854	000	000	3681	334-310
Total	279972	755919	8440	12660	14735	

Land Use

Type of Land	Present land use (in Ha)	At the End of Plan Period (in Ha)	At the end of Mine (in Ha)	Conceptual period (In Ha)			
				Public use	Backfill	Water body	Plantation
Quarry	0.08	1.85 (including backfilling 0.51ha)	1.85 (including backfilling 0.51ha)	-	-	1.85	0.49 (Dead bench plantation)
Safety Zone	-	0.58 (Plantation)	0.58 (Plantation)	-	-	-	0.58 (Plantation)
Road	0.05	0.05	0.05	0.05	-	-	-
Temporary rest shelter	0.06	Nil	Nil	-	-	-	-
Blocked area due to bore well safety	0.02	0.02	0.02	0.02			0.02 (Plantation)
Blocked area due to Road safety	0.22	0.22	0.22	0.22			0.22 (Plantation)
Total Area in use	0.43	2.72	2.72	0.29	0.31	1.05	1.07
Balanced area unused	2.29	Nil	Nil	-	-	-	-
Total lease Area	2.72	2.72	2.72	2.72			

ENVIRONMENT MANAGEMENT
Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.58 ha	1450 (Already done during previous year of mining)
2	Along Approach Road	:	630 m	1260
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
4	At dead bench area	:	0.49 ha	1225
5	Blocked Area	:	0.02 ha	50
6	Road block Plantation	:	0.22 ha	550
Total				4635

Note: A total of 4635 saplings were proposed to be planted. Out of which 1450 plant in Safety Zone area have been planted during previous year of mining.

(1260 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat & 1225 plant at dead bench area and 600 in blocked area) will be done.

Note – 10 % of total plant i.e. 465 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	15,92,500	4,25,000
4	Construction and maintenance of haul road	3,15,000	1,50,000
5	Garland Drain & Settling Tank	1,50,000	80,000

TOTAL	20,58,000	9,05,000

**3185plants *500 Rs (for each plants including hedges and fences) = Rs. 12,92,500 /-*

Note: A[^] total of 4635 saplings were proposed to be planted. Out of which 1450 plant in Safety Zone area have been planted during previous year of mining.

(1260 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat & 1225 plant at dead bench area) will be done in the last year of operation. (Total 2585 Plants).

*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*

300 300 = 90000/- or 1,50,000/- (including maintenance)*

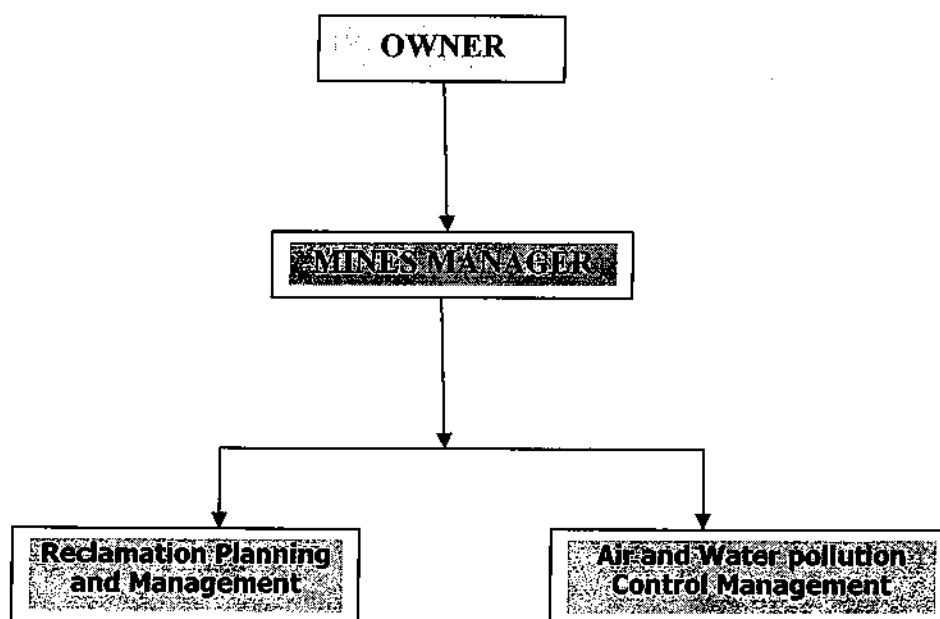
** 5.0 lakh per kilometer (5,00,000 * 0.63 km haul road = Rs. 3,15,000/-)*

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 8440 cum gritty soil & 14735 cum intercalated waste will be generated during quarry development. During quarry development in 1st year & 2nd year gritty soil and intercalated waste will be removed and this will be backfill within the exhausted quarry & in 3rd year gritty soil and intercalated waste will be removed and this will be temporarily dumped within the quarry & in year 4th removed intercalated waste & existing dumped materials will be backfill within the exhausted quarry.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4

2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°

- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation

- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted

by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Dundu Stone Deposit of Md. Mustafa, Village : Dundu, Thana : Manika, Distt. : Latehar, Jharkhand (2.72 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be

maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

4. Laharjori Stone Deposit of M/s Laxmi Stone (Partners : Shri Sandip Mandal & Shri Rajendra Yadav), Village : Laharjori, P.S. : Margomunda, Distt. : Deoghar, Jharkhand (0.81 Ha).

(Proposal no.: SIA/JH/MIN/ 545268 /2025)

The PAs are not present and hence, this project could not taken up for consideration.

It will be listed for consideration after request by the Project Authorities.

5. Ganjebari Stone Deposit of M/s Baba Basukinath Stone Works (Partners : (i) Shri Dewashish Kumar (ii) Shri Manoj Kumar Mahto (iii) Shri Laro Mehta), Village : Ganjebari, Thana : Karon, Distt. : Deoghar, Jharkhand (2.03 Ha).

(Proposal no.: SIA/JH/MIN/ 550323 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 39987.4 cum/annum or 107965.98 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Ganjebari Stone Deposit
2	Lessee:	:	Baba Basukinath Stone Works Partner: - 1. Sri Dewashish Kumar, S/o- Sri Rajendra Ram Partner: - 2. Sri Manoj Kumar Mahto, S/o-Sri Raghunath Mahto Partner: - 3. Sri Laro Mehta, S/o- Sri Hulas Mehta
3	Lease Address	:	Village – Ganjebari, Thana- Karon, District – Deoghar, State - Jharkhand
4	Lease Area	:	2.03ha. Acres- 5.02Acres
5	Type of Land	:	Non-Forest (Raiyati Land)
6	Project Cost	:	Rs. 90.0Lakhs
7	EMP Budget	:	Capital: Rs. 16.75Lakhs Recurring: 7.50Lakhs/ year
8	New or Expansion	:	New
9	Mineable Reserves	:	199804cum 539470.80Tonnes
10	Mine Life	:	5 years
11	Man power	:	23
12	Water Requirement	:	12.03 ~ 12.10KLD (Drinking: 0.23 KLD, Dust Suppression: 6.20KLD, Plantation: 5.6 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	200 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Jainti Nadi, Approx. 2.5 km towards WSW direction of mine site.
17	Nearest Habitation	:	Approx. 230 m towards West directionas per Google Earth EMP has been submitted.
18	Nearest Railway Station	:	Joramow Railway station, approx.1.84 km towards WNW direction
19	Nearest Airport	:	Deoghar Airport, approx. 27.76 km towards North direction
20	Nearest Forest	:	Fairly dense mixed jungle, Approx. 1.2 km towards South direction of mine site. Protected forest, Approx. 1.80 km towards NE direction of mine site.
21	Road & Highways	:	NH – 114A, Approx. 3.74 km towards NNE direction
22	Approach Road	:	Approx.550meter

CO-ORDINATES

1	Latitude	:	From 24°11'36.78" N To 24°11'45.59" N
2	Longitude	:	From 86°43'19.03" E To 86°43'31.10" E

LAND DETAILS

Khata no.	Plot no.
03 & 26	687 (P), 704 & 1312

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Deoghar vide letter no. 840/M, dated 14.08.2025.
2	CO	:	The CO, Karon (Deoghar) vide letter no. 429/Ra., dated 11.07.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Deoghar vide memo no. 896/M, dated 02.09.2025 certified that 01 other mining lease area (4.79 Acre) exists within 500 meters radius from proposed project site and total area is 9.81 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1094, dated 20.06.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Deoghar Forest Division vide letter no. 767, dated 21.07.2025 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Deoghar has been certified vide memo no. 897/M, dated 02.09.2025 that this project is mentioned in approved DSR of Deoghar District as a potential area (Page no. 183).
7	Gram Sabha	:	BDO, Karon vide letter no. 592/Vi., dated 16.07.2025 informed that Gram Sabha conducted on 14.07.2025.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Deoghar vide Letter No. 121/G, dated 02.09.2025.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty through email dated 10.09.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.39 ha	Life of Mine – 5 years
3	Waste Generation	:	Total 9492.20 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.052	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	194AMSL to 196 AMSL	
8	Ground Level Elevation	:	194AMSL	
9	Ultimate Working Depth	:	165AMSL (29m BGL)	
10	Water Table	:	152-150AMSL (42-44 m BGL)	
11	Topography of Mine	:	Undulating Topography	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum)	Bench level AMSL
1st	34770.00	93879.00	1830.00	195-189
2nd	39102.00	105575.40	2058.00	195-183
3rd	37984.80	102558.96	1999.20	189-171
4th	39987.40	107965.98	2104.60	171-165
5th	28507.60	76970.52	1500.40	195-183
Total	180351.80	486949.86	9492.20	-

Land Use

Pattern of Utilization	Present Land use (Ha)	At the end of plan period (Ha)	At the end of mine in ha
Quarry	Nil	1.39	1.39 (Entire area shall be left as water reservoir for rain water harvesting)
Safety Zone	Nil	0.64 (Plantation)	0.64 (Plantation)
Road	0.13	Comes under quarry	Comes under quarry
Total area in use	0.13	0.0	0.0
Balance area unused	1.90	0.0	0.0

Total	2.03	2.03	2.03

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.64 ha	1600
2	Along Approach Road	:	550m	1100
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
Total				2800

Note – 10 % of Total plant i.e. 280plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air I) Water ii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	14,00,000	3,50,000
4	Construction and maintenance of haul road	2,75,000	1,50,000
Total		16,75,000	7,50,000

**Note: *2800plants * 500 Rs (for each plants including hedges and fences)= Rs. 14,00,000/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day**

$300 \times 300 = 90,000/-$ or $1,50,000/-$ (including maintenance)

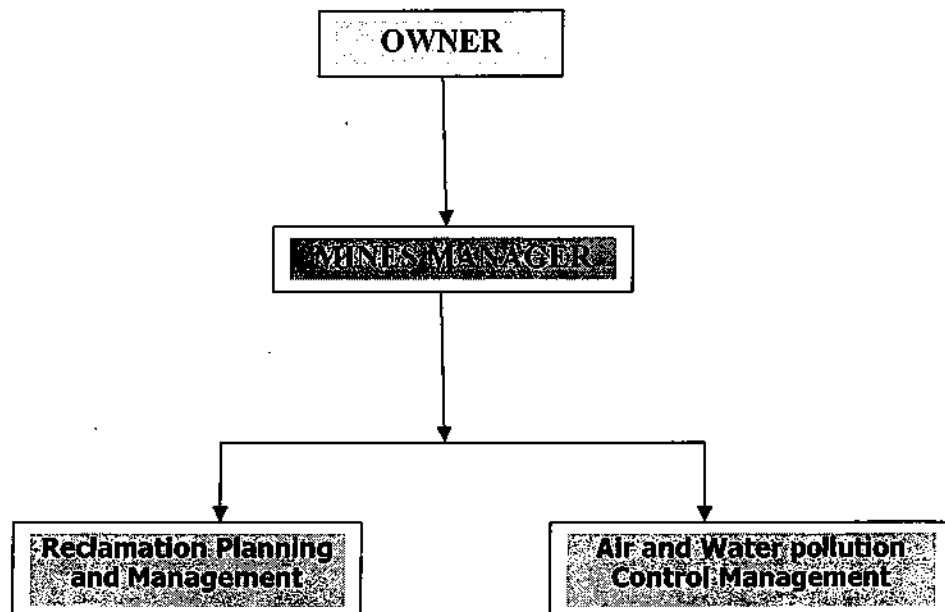
* 5.0 lakh per kilometer ($5,00,000 \times 0.55$ km haul road = Rs. 2,75,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 9492.20 cum waste shall be generated during the plan period which will be used in making & maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining plan period.



Organization Structure

Water Quality Management

- Mining is planned to be above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any, shall be discharged in natural stream after

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settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is **"Acceptable"**

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
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- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ganjebari Stone Deposit of M/s Baba Basukinath Stone Works (Partners : (i) Shri Dewashish Kumar (ii) Shri Manoj Kumar Mahto (iii) Shri Laro Mehta), Village : Ganjebari, Thana : Karon, Distt. : Deoghar, Jharkhand (2.03 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

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- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

6. Mathurapur Stone Deposit of M/s Jai Baba Dubey Stone (Partners : Shri Madan Yadav & Shri Dilip Kumar Ray), Village : Mathurapur, P.S. : Jasidih, Distt. : Deoghar, Jharkhand (1.290 Ha).

(Proposal no.: SIA/JH/MIN/ 550574 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 52222 cum/annum or 140998 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Mathurapur Stone Deposit
2	Lessee:	:	Jai Baba Dubey Stone (Partner- Sri Madan Yadav & Sri Dilip Kumar Ray)
3	Lease Address	:	Village – Mathurapur, Thana - Jasidih, District – Deoghar, State- Jharkhand.
4	Lease Area	:	1.290ha. Acres- 3.19Acres
5	Type of Land	:	Non-Forest (Raiyati Land)
6	Project Cost	:	Rs. 80 Lakhs
7	EMP Budget	:	Capital: Rs. 14.24Lakhs Recurring: 6.40Lakhs/ year
8	New or Expansion	:	New
9	Mineable Reserves	:	233249cum 629772Tonnes
10	Mine Life	:	5 year.
11	Man power	:	20
12	Water Requirement	:	9.92 ~ 10.00 KLD (Drinking: 0.20KLD, Dust Suppression: 4.93KLD, Plantation: 4.79 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	500 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Mayurakshi river, Approx. 0.17 km towards SE direction of mine site.
17	Nearest Habitation	:	Approx. 0.16 km towards WNW directionas per Google Earth EMP has been submitted.
18	Nearest Railway Station	:	Mathurapur Railway Station, approx. 3.91 km towards SSW direction.
19	Nearest Airport	:	Deoghar Airport, approx. 7.73 km towards NE direction.

20	Nearest Forest	:	Protected Forest, Approx. 1.30 Km in West direction of mine site. Protected forest, Approx. 2.50 Km in NE direction of mine site.
21	Road & Highways	:	NH-114A, 9.31 km in NE direction.
22	Approach Road	:	Approx 450 meter

CO-ORDINATES

1	Latitude	:	From 24° 23' 35.9936" N	To 24° 23' 40.5211" N
2	Longitude	:	From 86° 39' 05.8495" E	To 86° 39' 12.5783" E

LAND DETAILS

Khata no.	Plot no.
27	494, 499 & 602 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Deoghar vide letter no. 556/M, dated 20.05.2025.
2	CO	:	The CO, Deoghar vide letter no. 1108/Ra., dated 18.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Deoghar vide memo no. 760/M, dated 14.07.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1642, dated 02.09.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Deoghar Forest Division vide letter no. 1255, dated 04.08.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Deoghar District (Page no. 47, Sl. No. 39).

7	Gram Sabha	:	BDO, Deoghar vide letter no. 1196/Vi., dated 27.09.2024 informed that Gram Sabha conducted on 19.09.2024.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Deoghar vide Memo No. 105/G, dated 15.07.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi Mechanized Method	
2	Quarry Area	:	0.843 ha	Life of Mine – 5 year.
3	Waste Generation	:	Total 39284 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.18	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	246 AMSL to 251 AMSL	
8	Ground Level Elevation	:	246AMSL	
9	Ultimate Working Depth	:	214AMSL (32m BGL)	
10	Water Table	:	187-190AMSL (59-56 m BGL)	
11	Topography of Mine	:	small hillockTopography	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	100litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in Cum	Intercalated waste in Cum	Total Waste in Cum	Bench level AMSL
1st	44465	120055	19665	2340	22005	244-238
2nd	44465	120055	0	2340	2340	238-232
3rd	45557	123005	0	2398	2398	232-226
4th	46541	125659	0	2450	2450	226-214
5th	52222	140998	7705	2386	10091	244-214
Total	233249	629772	27370	11914	39284	-

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	0.843 (0.112 ha area shall be Backfilled, 0.496 ha converted in to water reservoir & 0.235 ha shall be left as dead benches)	0.843 (0.112 ha area shall be Backfilled, 0.496 ha converted in to water reservoir & 0.235 ha shall be left as dead benches)
Waste Dump	0.0	Nil (0.194 ha waste dump to be removed and backfilled)	Nil (0.194 ha waste dump to be removed and backfilled)
Safety Zone (Plantation)	0.0	0.447 (Plantation)	0.447 (Plantation)
Total	0.0	1.290	1.290
Unused Area	1.290	-	-
Total Lease Area	1.290		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.447 ha	1118
2	Along Approach Road	:	450m	900
3	Plantation at backfilled area	:	0.112 ha	280
4	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
Total				2398

Note – 10 % of Total plant i.e. 240plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring		
	i) Air		20,000
	l) Water	--	15,000
	li) Soil		8,000
	iv) Noise		7,000
3	Plantation	11,99,000	2,40,000
4	Construction and maintenance of haul road	2,25,000	1,50,000
Total		14,24,000	6,40,000

Note: * 2398 plants * 500 Rs (for each plants including hedges and fences) =Rs. 11,99,000/-

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- or 1,50,000/- (including maintenance)

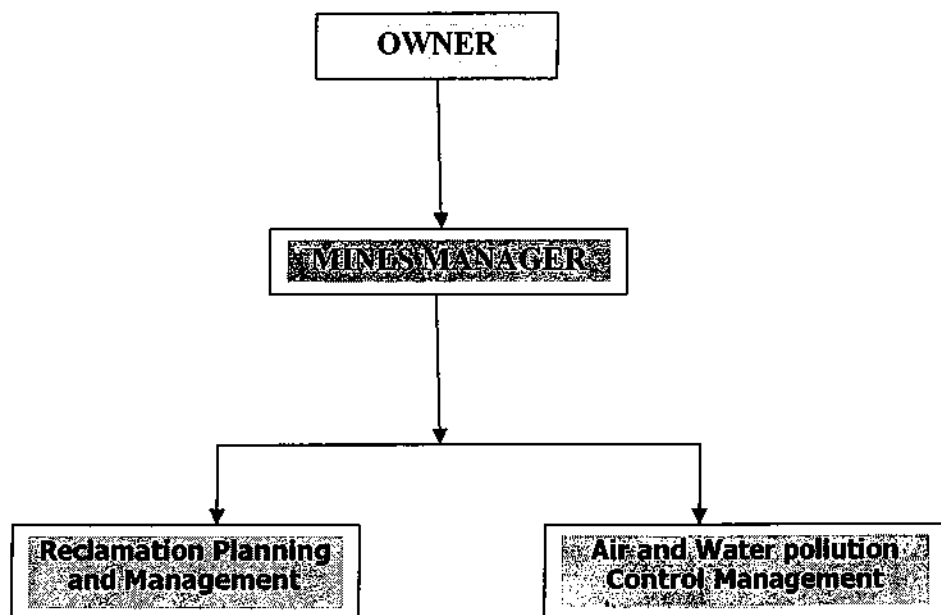
* 5.0 lakh per kilometer (5,00,000 * 0.45 km haul road = Rs. 2,50,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total 39284 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 19642 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 19642 cum insitu 24552.50 cum loose & 20869.63 cum compact waste shall be used for dumping and backfilling. From the first year to fourth year, the waste shall be temporarily dumped in the eastern part of the applied lease area and during fifth year the generated waste and waste materials of temporary dump shall be removed and used for backfilling of exhausted part of quarry in western part and it will cover 0.112ha.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or

		system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6

4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is “Acceptable”

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.

- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Mathurapur Stone Deposit of M/s Jai Baba Dubey Stone (Partners : Shri Madan Yadav & Shri Dilip Kumar Ray), Village : Mathurapur, P.S. : Jasidih, Distt. : Deoghar, Jharkhand (1.290 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

7. Banadag Stone Deposit of Shri Dinesh Kumar Choudhary, Village : Banadag, Thana : Angara, Distt. : Ranchi, Jharkhand (0.809 Ha).

(Proposal no.: SIA/JH/MIN/ 550575 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 12152 cum/annum or 34027 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Banadag Stone Deposit
2	Lessee:	: Sri Dinesh Kumar Choudhary, S/o Late Ramesh Choudhary, At village- Salhan, P.O + Thana- Angara, District- Ranchi
3	Lease Address	: Village – Banadag, Thana- Angara, District – Ranchi, State – Jharkhand.
4	Lease Area	: 0.809ha. Acres- 2.00 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 60.0 Lakhs
7	EMP Budget	: Capital: Rs. 13.78Lakhs Recurring: 6.70Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 60757.5 cum 170121 tonnes
10	Mine Life	: 5 years
11	Man power	: 27
12	Water Requirement	: 9.81 ~ 10.00 KLD(Drinking: 0.27KLD, Dust Suppression: 5.23KLD, Plantation: 4.31KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 200KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Subarnarekha River, Approx. 0.23 km towards North direction of mine site EMP submitted.
17	Nearest Habitation	: Approx. 0.30 km towards south direction as per Google Earth EMP has been submitted.
18	Nearest Railway Station	: Jonha Railway station, approx. 10.76 km towards SSE direction.
19	Nearest Airport	: Birsa Munda Airport, Ranchi approx. 29.50 km towards WSW direction.
20	Nearest Forest	: Dense jungle mainly sal, Approx. 3.0 km towards SE direction of mine site.

			Dense jungle mainly sal, Approx. 4.30 km towards South direction of mine site.
21	Road & Highways	:	NH – 320, Approx. 3.66 km towards North direction.
22	Approach road	:	Approx. 600 m

CO-ORDINATES

1	Latitude	:	From 23°27'00.57" N	To N 23°27'04.11"
2	Longitude	:	From E 85°34'25.86"	To E 85°34'30.47"

LAND DETAILS

Khata no.	Plot no.
04	400 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 1337/M, dated 28.11.2023.
2	CO	:	The CO, Angara, Ranchi vide letter no. 728 (ii), dated 27.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. During the appraisal it was seen from the KML that habitation & River exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Ranchi vide memo no. 1119/M, dated 10.09.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 1215, dated 30.11.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Ranchi Forest Division vide letter no. 4272, dated 09.11.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Ranchi District (Page no. 61, Sl. No. 02).
7	Gram Sabha	:	BDO, Angara, Ranchi vide letter no. 1387 (ii), dated 01.11.2023 informed that Gram Sabha conducted on 19.10.2023.

8	Mine Plan Approval	:	Approved by DMO, Ranchi vide Memo No. 227/M, dated 17.02.2025.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method
2	Quarry Area	:	0.482Ha. Life of Mine –5 years
3	Waste Generation	:	Total 2370 cum gritty soil and 3198 cum intercalated waste shall be generated during this plan period.
4	Stripping Ratio	:	1: 0.05
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	578AMSL to 574AMSL
8	Ground Level Elevation	:	574AMSL
9	Ultimate Working Depth	:	554AMSL (20m BGL)
10	Water Table	:	546-539AMSL (28-35 m BGL)
11	Topography of Mine	:	Undulating small hillocks
12	Explosive Requirement	:	90 kg/day
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Year	Production of stone		Intercalated waste	Removal of gritty soil		Bench R.L
	Cum	MT	cum	Cum	MT	
1 st year	12152	34027	640	320	480	578-566
2 nd year	12150	34019	639	1150	1725	578-572
3 rd year	12152	34027	640	300	450	578-566
4 th year	12150	34019	639	600	900	578-566
5 th year	12152	34027	640	000	000	566-554
Total	60756	170119	3198	2370	3555	

Land Use

Pattern of Utilization	Present Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)		
			Public use	Water body	Plantation
Quarry	0.054	0.482 (including backfilling 0.099 ha)	-	0.467	0.015 (dead bench plantation)

Safety Zone	Nil	0.327 (Plantation)	-	-	0.327
Road	0.056	Nil	-	-	-
Total area in use	0.110	0.809	-	0.467	0.342
Balance area unused	0.699	Nil	-	--	-
Total	0.809	0.809	0.809		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.327ha	818
2	Along Approach Road	:	600 m	1200
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
4	At dead bench area	:	0.015 ha	38
Total				2156

Note – 10 % of Total plant i.e. 216 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	10,78,000	2,70,000
4	Construction and maintenance of haul road	3,00,000	1,50,000
TOTAL		13,78,000	6,70,000

Note: *2156plants * 500 Rs (for each plants including hedges and fences) = Rs. 10,78,000/-

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- ~ 1,50,000/-

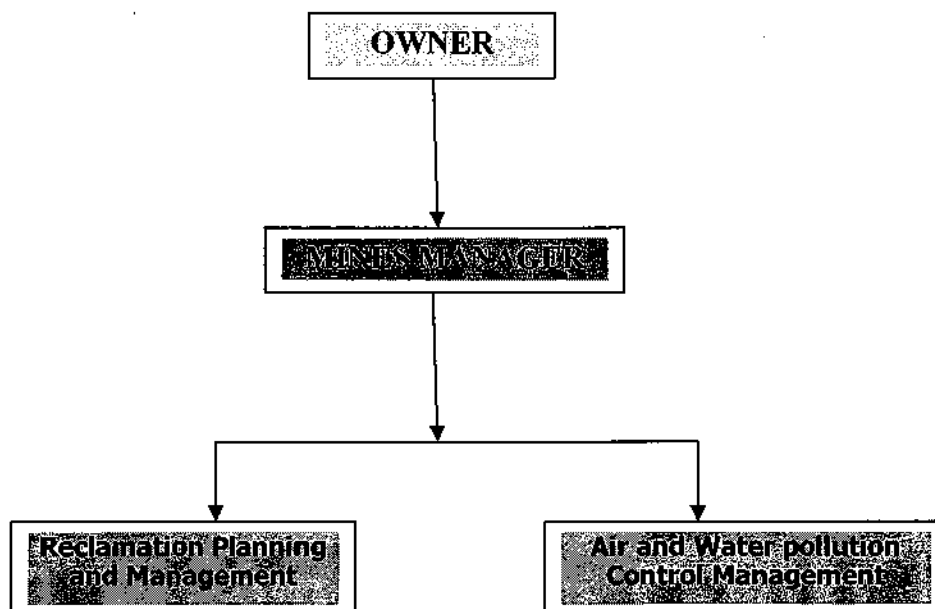
5 lakh per kilometer (500000 * 0.60 km haul road = Rs. 3,00,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

It has been calculated that total 2370 cum gritty soil and 3198 cum intercalated waste shall be generated during this plan period. During quarry development in 1st year will be removed and this will be used in haul road dressing & plantation & in 2nd year gritty soil & intercalated waste will be removed & this will be temporarily dumped at the north part of the area with suitable precautions like parapet wall, garland drain & in 3rd year removed gritty soil & intercalated waste will be used in haul road dressing & plantation & in 4th removed gritty soil & intercalated waste & existing temporarily dumped soil will be temporarily backfilled within the exhausted quarry & in 5th year removed intercalated waste & total temporarily backfill soil will be backfilled within the lower two benches of the exhausted quarry.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.

- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.

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L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12

3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Banadag Stone Deposit of Shri Dinesh Kumar Choudhary, Village : Banadag, Thana : Angara, Distt. : Ranchi, Jharkhand (0.809 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be

maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

8. Dhab Salaunia Stone Deposit of M/s M. R. Enterprises (Prop. : Md. Minhaj Alam), Village : Dhab Salaunia, Thana : Chouparan, Distt. : Hazaribagh, Jharkhand (0.83 Ha).

(Proposal no.: SIA/JH/MIN/ 545293 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 13376.00 cum/annum or 36115.20 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Dhab Salaunia Stone Deposit
2	Lessee:	:	M/s M. R. Enterprises Prop. : Md. Minhaj Alam, S/o- Md. Ataul Rahman At- Kamalpur, Ansar Nagar, Gondapur, Dist-Nawada, State-Bihar
3	Lease Address	:	Village – Dhab Salaunia, Thana- Chouparan, District – Hazaribagh, State - Jharkhand
4	Lease Area	:	0.83ha. Acres- 2.04 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)
6	Project Cost	:	Rs. 100Lakhs
7	EMP Budget	:	Capital: Rs. 11.25Lakhs Recurring: 5.80 Lakhs / year
8	New or Expansion	:	New

9	Mineable Reserves	:	1,33,620 cum	360774.00 Tonnes
10	Mine Life	:	10year.	
11	Man power	:	20	
12	Water Requirement	:	8.10~8.50KLD (Drinking: 0.20KLD, Dust Suppression: 4.30KLD, Plantation: 3.60 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Tilaiya Reservoir, Approx. 1.5 km from mine site in ENE Direction.	
17	Nearest Habitation	:	Nearest habitation at a distance of 1 km.	
18	Nearest Railway Station	:	Urwan Railway station, approx. 5.92 km towards SE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 131.25 km East direction.	
20	Nearest Forest	:	Protected forest, Approx. 3.50 km from mine site in NNE Direction. Protected forest, Approx. 3.0 km from mine site in NNW Direction.	
21	Road & Highways	:	NH- 20 Approx. 5.03 km in ESE direction from the mine site.	
22	Approach Road	:	Approx450meter	

CO-ORDINATES

1	Latitude	:	From 24°22'27.59" N	To 24°22'32.41" N
2	Longitude	:	From 85°24'35.82" E	To 85°24'40.61"E

LAND DETAILS

Khata no.	Plot no.
23	118

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Hazaribag vide memo no. 807/Khanan, dated 24.06.2024.
2	CO	:	The CO, Chauparan (Hazaribag) vide letter no. 1435, dated 20.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO Cluster	:	DMO, Hazaribag vide memo no. 272/Khanan, dated 05.03.2025 certified that 01 other LoI (1.84 Acre) exists within 500 m radius from proposed project site and total area is 3.88 Acre.

4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1777, dated 09.09.2022 certified that the proposed project site is outside Eco Sensitive Zone of Gautambudha Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag West Forest Division vide letter no. 3434 dated 22.09.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Sl. no. 04, Page no. 95).
7	Gram Sabha	:	Gram Sabha conducted on 30.10.2022.
8	Mine Plan Approval	:	Approved by DMO, Hazaribag vide Letter No. 870/Mining, dated 17.07.2025.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty through email dated 10.09.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method
2	Quarry Area	:	0.51 Ha Life of Mine-10 year.
3	Waste Generation	:	Total 2372.00cum waste shall be generated during the plan period.
4	Stripping Ratio	:	1: 0.01
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	370AMSL to 371AMSL
8	Ground Level Elevation	:	370AMSL
9	Ultimate Working Depth	:	346AMSL (24m BGL)
10	Water Table	:	331-333AMSL (37-39 m BGL)
11	Topography of Mine	:	Undulating Topography
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	120litre/day

Production Details

year	Production of Stone in Cum	Production of Stone in Tonnes	Waste (Cum) in plan period	Bench level AMSL
1 st	12000.00	32400.00	1354.00	370-364
2 nd	13060.00	35262.00	529.00	370-358

3 rd	13376.00	36115.20	-	364-358
4 th	11540.00	31158.00	-	358-346
5 th	11755.00	31738.50	498.00	370-346
Total	61731.00	166673.70	2372.00	-

Land Use

Pattern of utilization	Existing Land(Hect)	After End of plan Period (Hect)	Land Use pattern after life of the mine (Hect)
Quarry	-	0.36	0.51 (Entire area will be converted into water Reservoir)
Mine Road	0.01	Comes Under mine	Comes Under mine
Safety Zone	-	0.32 (Plantation)	0.32 (Plantation)
Total	0.01	0.68	0.83
Balance	0.82	0.15	-
Grand Total	0.83	0.83	0.83

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.32ha	800
2	Along Approach Road	:	450 m	900
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
Total				1800

Note – 10 % of Total plant i.e.180plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air I) Water li) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	9,00,000	1,80,000
4	Construction and maintenance of haul road	2,25,000	1,50,000
Total		11,25,000	5,80,000

Note: *1800 plants * 500 Rs (for each plants including hedges and fences) = 9.0 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-or 1,50,000-(including maintenance)

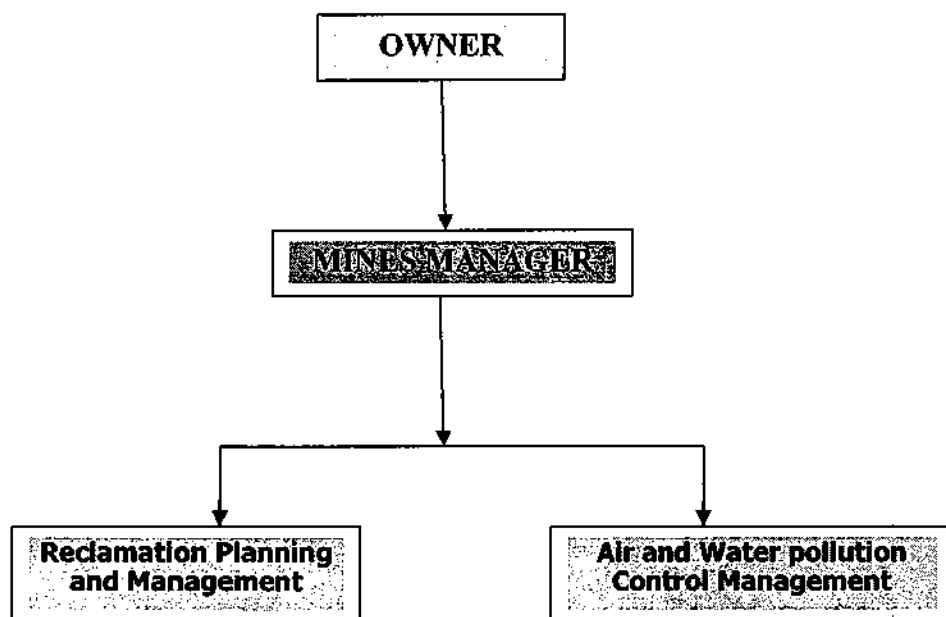
* 5 lakh per kilometer (500000 * 0.45 km haul road = 2,25,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 2372.00 cum waste shall be generate which will used in maintenance of mine road and village road.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within

		last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12

3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the

weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming

vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Dhab Salaunia Stone Deposit of M/s M. R. Enterprises (Prop. : Md. Minhaj Alam), Village : Dhab Salaunia, Thana : Chouparan, Distt. : Hazaribagh, Jharkhand (0.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

9. Dhab Salaunia Stone Deposit of M/s Surya Minerals (Partner : (i) Shri Saurav Sauri (ii) Khalid Khalil (iii) Shri Suryadeo), Village : Dhab Salaunia, Thana : Chouparan, Distt. : Hazaribagh, Jharkhand (0.955 Ha).

(Proposal no.: SIA/JH/MIN/ 550127 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 15146.30 cum/annum or 40895.01 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Dhab Salaunia Stone Deposit
2	Lessee:	: M/s Surya Minerals 1-Partner- Saurav Sauri, S/O- Gopal Kumar, AT- Tripurari Bhawan, Giridih Road, Koderma, Thana/Dist-Koderma, Jharkhand 2-Partner- Khalid Khalil, S/o- Late-Khalid Ahmad, Flat-No-301, Block-B, Aishwarya Enclave, Tiwari Tank Road, Hindpri, Ranchi, Dist- Ranchi 3- Partner -Suryadeo, S/o-Late-Lalo Yadav, Vill./Ward No-1, Pathaldiha, Thana/P.O./Dist-Koderma, Jharkhand
3	Lease Address	: Village – Dhab Salaunia, Thana- Chauparan, District – Hazaribagh, State - Jharkhand
4	Lease Area	: 0.955ha. Acres- 2.36 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 60Lakhs
7	EMP Budget	: Capital: Rs. 13.54Lakhs Recurring: 6.73 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 1,51,463 cum 408950.10 Tonnes
10	Mine Life	: 10year.
11	Man power	: 19
12	Water Requirement	: 8.65 ~ 9.0 KLD (Drinking: 0.19 KLD, Dust Suppression: 4.61KLD, Plantation: 3.85KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 200 KVA
15	Crusher	: Yes
16	Nearest Water Body	: Tilaiya Reservoir, Approx 0.41 km from mine site in SW Direction as per google earth EMP submitted

17	Nearest Habitation	:	600 meter from the project site
18	Nearest Railway Station	:	Urwan Railway station, approx. 6.28 km towards ESE direction
19	Nearest Airport	:	Deoghar Airport, approx. 132.37 km East direction.
20	Nearest Forest	:	Protected forest, Approx. 3.50 km from mine site in NNE Direction. Protected forest, Approx. 3.0 km from mine site in North Direction.
21	Road & Highways	:	NH- 20 Approx. 3.84 km in SE direction from the mine site.
22	Approach Road	:	Approx 480 meter

CO-ORDINATES

1	Latitude	:	From 24°22'05.675" N	To 24°22'09.645" N
2	Longitude	:	From 85°24'10.109" E	To 85°24'16.302"E

LAND DETAILS

Khata no.	Plot no.
22, 38, 10, 06 & 13	179, 180, 181, 182 & 183

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Hazaribag vide memo no. 307/Khanan, dated 23.02.2024.
2	CO	:	The CO, Chauparan (Hazaribag) vide letter no. 854, dated 20.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II. During the appraisal it was seen from the KML that Tilaiya Dam at a distance of 400 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Hazaribag vide memo no. 276/Khanan, dated 05.03.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1925, dated 26.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Gautambudha Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag West Forest Division vide letter no. 7276, dated 06.12.2023 certified that the distance of notified forest is more than 250 meters from proposed project

		:	site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Sl. no. 01, Page no. 94).
7	Gram Sabha	:	Gram Sabha conducted on 21.07.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Hazaribag vide Memo No. 73, dated 01.09.2025.
9	Qualified Person	:	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method
2	Quarry Area	:	0.608 Ha Life of Mine-10 year.
3	Waste Generation	:	Total 4575.00cum waste shall be generated during the plan period.
4	Stripping Ratio	:	1: 0.01
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	372AMSL to 380AMSL
8	Ground Level Elevation	:	372AMSL
9	Ultimate Working Depth	:	356 AMSL (16 m BGL)
10	Water Table	:	325-333AMSL (47-39 m BGL)
11	Topography of Mine	:	Flat Topography
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	120 litre/day

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Removal of O.B. (cum)	Bench level AMSL
1st	15146.30	40895.01	2989	380-374
2nd	15146.30	40895.01	1586	380-368
3rd	15146.30	40895.01	0	374-368
4th	15146.30	40895.01	0	374-362
5th	15146.30	40895.01	0	374-362
Total	75731.50	204475.05	4575	-

Land Use

Pattern of utilization	Existing Land(Hect)	After End of plan Period (Hect)	At conceptual period (Hect)
Excavation	Nil	0.351	0.608 (0.608 area shall be left as water reservoir for rain water harvesting)
Waste dump	Nil	Nil	Nil
Road	Nil	Nil (within quarry)	Nil (within quarry)
Infrastructure	Nil	0.257 (crusher area)	Nil(comes under quarry)
Plantation (within safety zone)	Nil	0.347 (Plantation)	0.347 (Plantation)
Total	-	0.955	0.955

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.347ha	868
2	Along Approach Road	:	480 m	960
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
Total				1928

Note – 10 % of Total plant i.e.193plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

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3	Plantation	9,64,000	1,93,000
4	Construction and maintenance of haul road	2,40,000	1,50,000
5	Garland Drain & Settling Tank	1,50,000	80,000
Total		13,54,000	6,73,000

Note: *1928 plants * 500 Rs (for each plants including hedges and fences) = 9,64,000/-

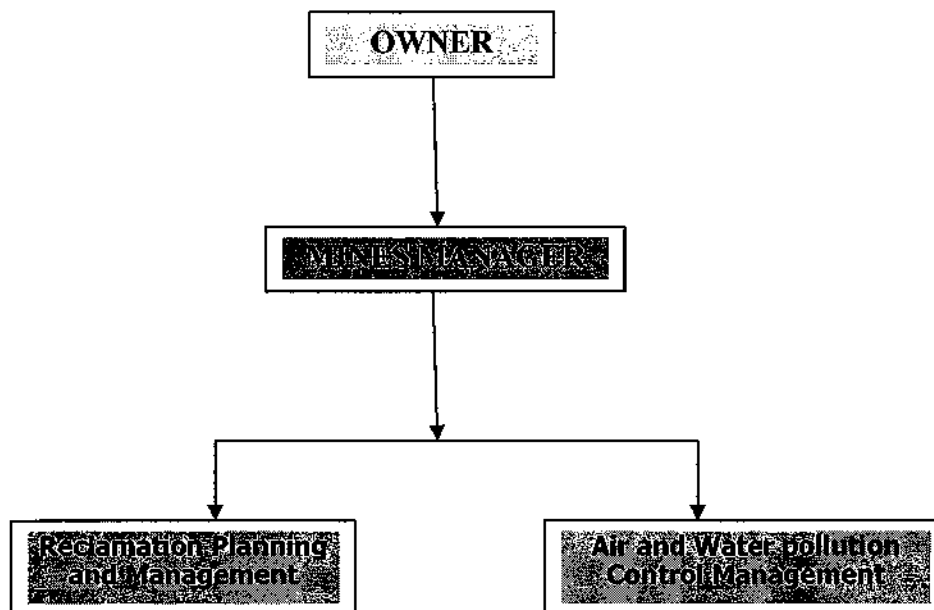
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Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale

1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in







loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers

- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

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- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Dhab Salaunia Stone Deposit of M/s Surya Minerals (Partner : (i) Shri Saurav Sauri (ii) Khalid Khalil (iii) Shri Suryadeo), Village : Dhab Salaunia, Thana : Chouparan, Distt. : Hazaribagh, Jharkhand (0.955 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

10. Bhatbigha Stone Deposit of M/s Balaji Stone Works (Partners : (i) Shri Arvind Kumar Singh (ii) Shri Rajeev Kumar (iii) Shri Ajit Kumar Mehta (iv) Shri Himanshu Ranjan (v) Shri Sant Ranjan Singh (vi) Shri Ranjay Kumar Ray), Village : Bhatbigha, Thana : Chauparan, Distt. : Hazaribagh, Jharkhand (0.89 Ha).

(Proposal no.: SIA/JH/MIN/ 547172 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity-5833 cum/annum or 16332 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Bhatbigha Stone Deposit
2	Lessee:	:	M/S Balaji Stone Works Partners 1): Sri Arvind Kumar Singh, S/o Late Dinanath Singh, At - Asnabad, Ward No. -17, P.O. - JhumriTelaiya, P.S. - Telaiya, District - Koderma, Jharkhand. 2): Sri Rajeev Kumar, S/o Sri Tej Narayan Singh, At - Near Bharpura Market, Bharpura, Sonpur, District - Saran, Bihar. 3): Sri Ajit Kumar Mehta, S/o Ranchandra Mehta, At- Lengrapipar, P.O. + P.S. - Domchanch, District - Koderma, Jharkhand.

		4): Sri Himanshu Ranjan, S/o Sri Chandrashekhar Singh, At- Gheghtha, District - Saran, Bihar. 5): Sri Sant Ranjan Singh, S/o Late Bharat Prasad Singh, At- Addi Banglow Road, Near Durga Mandap, P.O. - JhumriTelaiya, P.S. - Telaiya, District - Koderma, Jharkhand. 6): Sri Ranjay Kumar Ray, S/o Sri Tarkeshwar Ray, At- Birsa Nagar Telco, Jamshedpur, District - East Singhbhum, Jharkhand.
3	Lease Address	: Village – Bhatbigha, Thana- Chauparan, District – Hazaribagh, State – Jharkhand
4	Lease Area	: 0.89ha. Acres- 2.20 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 70.0 Lakhs
7	EMP Budget	: Capital: Rs. 14.15 Lakhs Recurring: 6.84Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 57594 cum 161263 tonnes
10	Mine Life	: 10 years
11	Man power	: 26
12	Water Requirement	: 10.26 ~ 10.50 KLD (Drinking: 0.26KLD, Dust Suppression: 5.46KLD, Plantation: 4.54 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 200KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Tilaiya Reservoir, Approx. 1.98 km. in SSW direction. Margoja Nadi, Approx. 3.0 km. in NE direction.
17	Nearest Habitation	: Bhatbigha approx. 400m towards NWN directionas per Google Earth EMP has been submitted.
18	Nearest Railway Station	: Urwan Railway station, approx. 6.61 km towards ESE direction.
19	Nearest Airport	: Deoghar Airport, approx. 131.85km towards East direction
20	Nearest Forest	: PF, Approx. 1.59 km towards North direction of mine site. PF, Approx. 2.30 km towards NNE direction of mine site. Fairly Dense Jungle mainly, Approx. 4.0 km towards North direction of mine site.
21	Road & Highways	: NH – 20, Approx. 4.98 km towards SSE direction.
22	Approach road	: Approx. 560 m

CO-ORDINATES

1	Latitude	: From N24°22'59.964"	To N24°23'03.279"
2	Longitude	: FromE 85°24'25.480"	ToE85°24'32.702"

LAND DETAILS

Khata no.	Plot no.
37, 23, 25 & 54	555, 556, 592, 598 (P) & 599

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Hazaribag vide memo no. 308/Khanan, dated 23.02.2024.
2	CO	:	The CO, Chauparan (Hazaribag) vide letter no. 1117, dated 13.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Hazaribag vide memo no. 275/Khanan, dated 05.03.2025 certified that 03 other LoI (2.40 Acre, 2.88 Acre & 2.20 Acre) exists within 500 m radius from proposed project site and total area is 9.68 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2256, dated 03.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Gautambudha Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag West Forest Division vide letter no. 158, dated 05.01.2024 certified that the distance of notified forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Sl. no. 02, Page no. 94).
7	Gram Sabha	:	Gram Sabha conducted on 16.11.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology District Geological Office, Hazaribag vide Memo No. 57/, dated 30.07.2025.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.47Ha	Life of Mine –10 years
3	Waste Generation	:	Total 1523 cum intercalated waste during the plan period.	
4	Stripping Ratio	:	1: 0.05	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	379AMSL to376 AMSL	

8	Ground Level Elevation	:	376AMSL
9	Ultimate Working Depth	:	361 AMSL (15m BGL)
10	Water Table	:	356-340AMSL (20-36 m BGL)
11	Topography of Mine	:	Undulating small hillocks.
12	Explosive Requirement	:	90 kg/day
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Year	Production of stone		Intercalated waste	Removal of gritty soil		Bench R.L
	Cum	MT	cum	Cum	MT	
1 st year	5743	16080	302	455	683	379-373
2 nd year	5805	16253	306	520	780	379-373
3 rd year	5743	16080	302	520	780	379-373
4 th year	5805	16253	306	690	1035	379-373
5 th year	5833	16332	307	677	1016	379-373
Total	28929	80998	1523	2862	4294	

Land Use

Pattern of Utilization	Present Land use (Ha)	At the end of plan period (Ha)	At the end of mine in ha	At Conceptual period (Ha)		
				Public use	Water body	Plantation
Quarry	0.054	0.47	0.47	--	0.47	--
Safety Zone	Nil	0.42 (Plantation)	0.42 (Plantation)	--	--	0.42 (Plantation)
Road	0.066	--	--	--	--	--
Total area in use	0.120	0.89	0.89	--	0.47	0.42
Balance area unused	0.770	Nil	Nil	--	--	--
Total		0.890			0.890	

ENVIRONMENT MANAGEMENT**Green Belt Development**

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.42ha	1050
2	Along Approach Road	:	560m	1120
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
	Total	:	-	2270

Note – 10 % of Total plant i.e.227 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	11,35,000	2,84,000
4	Construction and maintenance of haul road	2,80,000	1,50,000
Total		14,15,000	6,84,000

Note: *2270 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,35,000/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day 300* 300 = 90000/- ~ 1,50,000/-

* 5 lakh per kilometer (500000 * 0.56 km haul road =2,80,000/-)

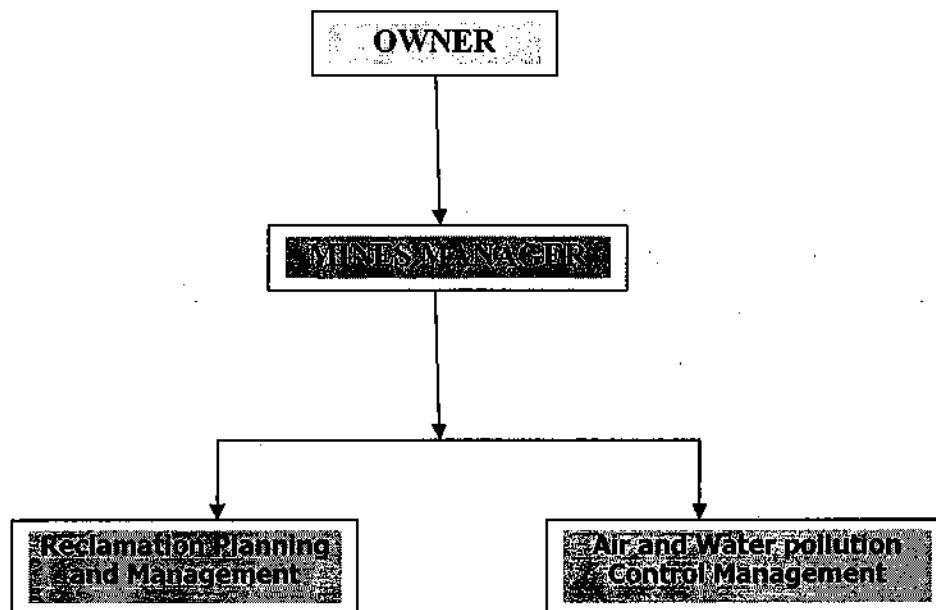
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000

3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 1523 cum intercalated waste & 2862 cum Gritty soil during the plan period, which shall be used in making and maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining plan period.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.

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5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
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The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

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Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

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- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

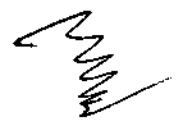
Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine



- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of

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Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bhatbigha Stone Deposit of M/s Balaji Stone Works (Partners : (i) Shri Arvind Kumar Singh (ii) Shri Rajeev Kumar (iii) Shri Ajit Kumar Mehta (iv) Shri Himanshu Ranjan (v) Shri Sant Ranjan Singh (vi) Shri Ranjay Kumar Ray), Village : Bhatbigha, Thana : Chauparan, Distt. : Hazaribagh, Jharkhand (0.89 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

11. Pandeni Mako Stone Deposit of M/s Bhai Bhai Stone Works (Partners : Md. Moksar Sk & Rafik Shekh), Village : Pandeni Mako, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.60 Ha).

(Proposal no.: SIA/JH/MIN/ 549353 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity-53430 cum/annum or 154945 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Pandeni Mako Stone Deposit
2	Lessee:	: M/S Bhai Bhai Stone Works Partners – Md. Moksar Sk, S/o Mamul huk At Village– Jampur, Thana+ P.O. – Barharwa, District – Sahibganj, State – Jharkhand
3	Lease Address	: Village – Pandeni Mako, Thana- Borio, District – Sahibganj, State - Jharkhand
4	Lease Area	: 2.60ha. Acres- 6.43 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 90.0 Lakhs
7	EMP Budget	: Capital: Rs. 34.42Lakhs Recurring: 10.31Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 534028 cum 1548679 tonnes
10	Mine Life	: 10 years
11	Man power	: 34
12	Water Requirement	: 18.54 ~ 19.00 KLD(Drinking: 0.34KLD, Dust Suppression: 5.58KLD, Plantation: 12.62 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 200KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Chatro Nadi, Approx. 3.5 km towards NW direction of mine site.
17	Nearest Habitation	: 700 meter from the project site.
18	Nearest Railway Station	: Kalian chak Railway station, approx. 9.01 km towards ENE direction
19	Nearest Airport	: Deoghar Airport, approx. 114 km towards WSW direction.
20	Nearest Forest	: Fairly dense mixed jungle, Approx. 0.92 km towards North direction of mine site. Protected forest, Approx. 2.89 km towards SW direction of mine site.

21	Road & Highways	:	SH – 18, Approx. 4.50 km towards WNW direction.
22	Approach road	:	Approx. 500 m

CO-ORDINATES

1	Latitude	:	From N25°00'17.539"	To N25°00'25.052"
2	Longitude	:	From E87°39'08.719"	To E87°39'15.046"

LAND DETAILS

Khata no.	Plot no.
21 & 14	82 (P) & 83 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1137/M, dated 21.06.2025.
2	CO	:	The CO, Borio, Sahibganj vide letter no. 63/Ra., dated 24.01.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 1227/M, dated 08.07.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 329, dated 07.02.2025 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 342, dated 10.02.2025 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	The DMO, Sahibganj has certified vide memo no. 1549/M, dated 22.08.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 182).
7	Gram Sabha	:	Gram Sabha conducted on 13.01.2025.
8	Mine Plan Approval	:	Approved by DMO, Sahibganj vide Memo No. 1487/M, dated 11.08.2025.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 1482/M, dated 11.08.2025 certified that said project falls under grid no. 75 and Hon'ble NGT

			does not decided the production capacity of that Grid.
10	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method
2	Quarry Area	:	2.12Ha. Life of Mine –10 years
3	Waste Generation	:	Total 14052 cum intercalated and 11992 cum Removal of gritty soil waste during the plan period
4	Stripping Ratio	:	1: 0.05
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	260AMSL to196AMSL
8	Ground Level Elevation	:	196AMSL
9	Ultimate Working Depth	:	182AMSL (14m BGL)
10	Water Table	:	172-169AMSL (24-27 m BGL)
11	Topography of Mine	:	Undulating small hillocks
12	Explosive Requirement	:	120 kg/day
13	Diesel/Fuel requirement	:	130litre/day

Production Details

Year	Production of stone		Intercalated waste	Removal of gritty soil		Bench R.L
	Cum	MT	cum	Cum	MT	
1 st year	53342	154688	2806	3867	5801	260-236
2 nd year	53380	154800	2810	4350	6525	242-224
3 rd year	53399	154858	2811	1239	1859	230-224
4 th year	53416	154908	2812	1305	1958	230-218
5 th year	53430	154945	2813	1231	1847	224-212
Total	266967	774199	14052	11992	17990	

Land Use

Pattern of Utilization	Present Land use (Ha)	At the end of plan period (Ha)	At the end of mine in ha	At Conceptual period (Ha)		
				Public use	Water body	Plantation
Quarry	Nil	1.620 (including temporary dumper 0.439 ha. parapet wall 0.003ha.&garland	2.12 (including backfill 0.54ha)	--	0.54	1.58 (dead bench plantation)

		drain 0.004 ha)				
Safety Zone	Nil	0.480 (Plantation)	0.48 (Plantation)	--	--	0.48 (Plantation)
Road	0.01	0.020	Nil	--	--	--
Dump	Nil	0.081	Nil	--	--	--
Parapet wall	Nil	0.003	Nil	--	--	--
Garland drain	Nil	0.005	Nil	--	--	--
Total area in use	0.01	2.209	2.60	--	0.54	2.06
Balance area unused	2.59	0.391	Nil	--	--	--
Total	2.60	2.60	2.60	2.60		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.48ha	1200
2	Along Approach Road	:	530m	1060
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
4	Plantation in Dead bench area	:	1.58 ha	3950
	Total			6310

Note – 10 % of Total plant i.e. 631 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring	--	20,000
	i) Air		15,000
	ii) Water		8,000
	iii) Soil		7,000
	iv) Noise		
3	Plantation	31,55,000	6,31,000
4	Construction and maintenance of haul road	2,65,000	1,50,000
TOTAL		34,42,000	10,31,000

Note: *6310 plants * 500 Rs (for each plants including hedges and fences) = Rs. 31,55,000/-

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- ~ 1,50,000/-

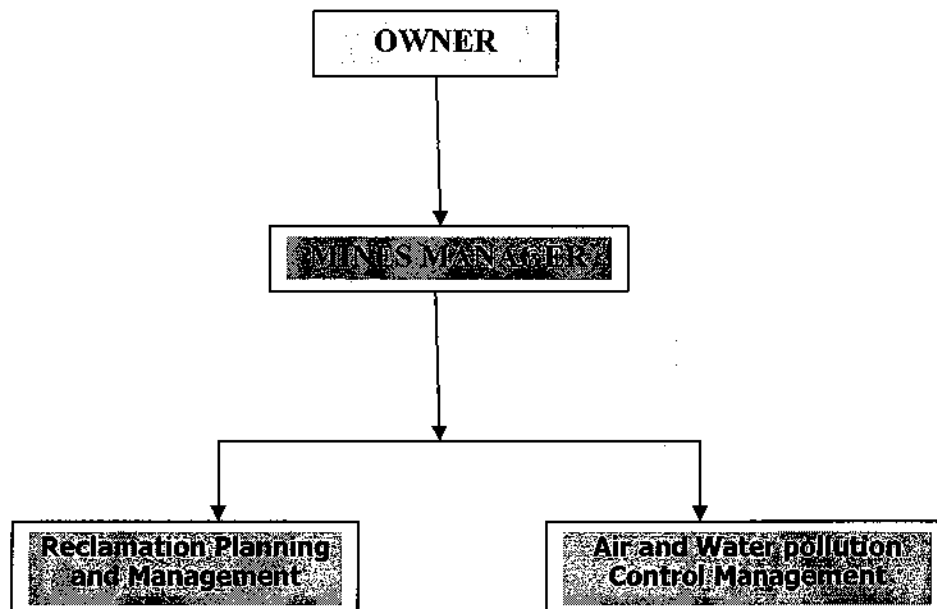
* 5 lakh per kilometer (500000 * 0.53 km haul road =2,65,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total 14052 cum intercalated and 11992 Removal of gritty soil waste generated during this plan period. The waste shall propose for temporary dump in South boundary of the applied lease area and some used for hauling and village road maintenance.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20

7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

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- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Pandeni Mako Stone Deposit of M/s Bhai Bhai Stone Works (Partners : Md. Moksar Sk & Rafik Shekh), Village : Pandeni Mako, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.60 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.

- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

12. Tulme Stone Deposit of M/s Bhai Bhai Stone Works (Partners : Md. Moksar Sk & Rafik Shekh), Village : Tulme, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.83 Ha).

(Proposal no.: SIA/JH/MIN/ 549337 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity-52249 cum/annum or 151523 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Tulme Stone Deposit
2	Lessee:	: M/S Bhai Bhai Stone Works Partners –Md. Moksursk& Rafik Shekh At Village – Jampur, Thana+P.O. – Barharwa, District – Sahebganj, State – Jharkhand.
3	Lease Address	: Village – Tulme, Thana- Taljhari, District – Sahebganj, State – Jharkhand
4	Lease Area	: 2.83ha. Acres- 7.00 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 90.0 Lakhs
7	EMP Budget	: Capital: Rs. 38.80Lakhs Recurring: 11.79Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 522309 cum 1514695 tonnes
10	Mine Life	: 10 years
11	Man power	: 34
12	Water Requirement	: 20.19 ~ 20.20 KLD (Drinking: 0.34KLD, Dust Suppression: 5.87KLD, Plantation: 13.98 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 200KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Barsati Nalla, Approx. 20 m as per CO LetterEMP submitted. ChatroNadi, Approx. 3.10 km towards NW direction of mine site.
17	Nearest Habitation	: 700 meter from the project site.
18	Nearest Railway Station	: Kalian chak Railway station, approx. 8.56 km towards ENE direction
19	Nearest Airport	: Deoghar Airport, approx. 115 km towards WSW direction.
20	Nearest Forest	: Fairly dense mixed jungle, Approx. 0.58 km towards North direction of mine site. Protected forest, Approx. 4.01 km towards SW direction of mine site.
21	Road & Highways	: SH – 18, Approx. 4.85 km towards WNW direction.
22	Approach road	: Approx. 500 m

CO-ORDINATES

1	Latitude	: From N25°00'49.923"	To N25°00'55.844"
2	Longitude	: FromE87°39'25.182"	ToE87°39'35.759"

LAND DETAILS

Khata no.	Plot no.
13	13 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1136/M, dated 21.06.2025.
2	CO	:	The CO, Taljhari vide letter no. 170, dated 04.03.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II also mentioned that the Barsati Nala at a distance of 20 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 1228/M, dated 08.07.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1038, dated 12.04.2025 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1039, dated 12.04.2025 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	The DMO, Sahibganj has certified vide memo no. 1548/M, dated 22.08.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 192).
7	Gram Sabha	:	Gram Sabha conducted on 19.02.2025.
8	Mine Plan Approval	:	Approved by DMO, Sahibganj vide Memo No. 1486/M, dated 11.08.2025.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 1483/M, dated 11.08.2025 certified that said project falls under grid no. 66 and production is within the over all permissible production limit.
10	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.83Ha. or 7.00Acre	Life of Mine –10 years
3	Waste Generation	:	Total 13748 cum intercalated waste and 13823 Removal of Gritty Soil waste during the plan period.	

4	Stripping Ratio	:	1: 0.05
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	215AMSL to 150AMSL
8	Ground Level Elevation	:	150AMSL
9	Ultimate Working Depth	:	135AMSL (15m BGL)
10	Water Table	:	127-122AMSL (23-28 m BGL)
11	Topography of Mine	:	Undulating small hillocks
12	Explosive Requirement	:	120 kg/day
13	Diesel/Fuel requirement	:	130litre/day

Production Details

Year	Production of stone		Intercalated waste	Removal of gritty soil		Bench R.L
	Cum	MT	cum	Cum	MT	
1 st year	52218	151432	2748	3485	5228	213-195
2 nd year	52229	151462	2749	3543	5315	201-189
3 rd year	52245	151511	2750	3197	4796	195-183
4 th year	52245	151511	2750	2180	3270	189-177
5 th year	52249	151523	2751	1418	2127	183-171
Total	261186	757439	13748	13823	20736	

Land Use

Pattern of Utilization	Present Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)		
			Public use	Water body	Plantation
Quarry	Nil	1.750 (including temporary dumper 0.551 ha. parapet wall 0.008ha. & garland drain 0.009 ha)	-	0.45	1.77 (dead bench plantation)
Safety Zone	Nil	0.610 (Plantation)	-	--	0.61 (Plantation)
Road	0.008	0.038	-	--	--
Total area in use	0.008	2.398	-	0.45	2.38
Balance area unused	2.822	0.432	-	--	-

Total	2.83	2.83	2.83

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.61ha	1525
2	Along Approach Road	:	470m	940
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
4	Plantation in Dead bench area		1.77 ha	4425
	Total			6990

Note – 10 % of Total plant i.e. 699 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	34,95,000	6,99,000
4	Construction and maintenance of haul road	2,35,000	1,50,000
5	Garland drain & Settling tank	1,50,000	80,000
TOTAL		38,80,000	11,79,000

Note: *6990plants * 500 Rs (for each plants including hedges and fences) = Rs. 34,95,000/-

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- ~ 1,50,000/-

* 5 lakh per kilometer (500000 * 0.47 km haul road = 2,35,000/-)

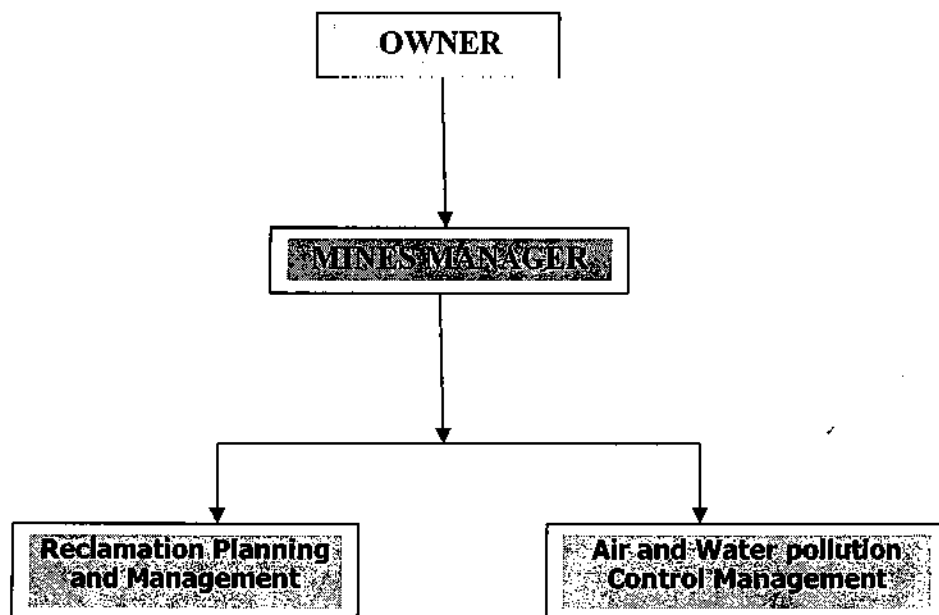
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000

2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total 13748 cum intercalated waste and 13823 Removal of Gritty Soil waste generated during this plan period. The waste shall propose for temporary dump in South boundary of the applied lease area and some used for hauling and village road maintenance.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.

C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is “Acceptable”

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling

- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

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The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

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- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
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The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

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- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
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- Mine road shall be made smooth regularly with a road roller.

- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
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- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Tulme Stone Deposit of M/s Bhai Bhai Stone Works (Partners : Md. Moksar Sk & Rafik Shekh), Village : Tulme, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

13. Champa Stone Deposit of M/s Kamakhya Stone Works (Partner : Shri Pawan Kumar), Village : Champa, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.488 Ha).

(Proposal no.: SIA/JH/MIN/ 547351 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity-45866 cum/annum or 123838 TPA.

Project and Location Details:

SI	Parameter	Details
1	Project Name	: Champa Stone Deposit
2	Lessee:	: M/s Kamakhya Stone Works Partner- Sri Pawan Kumar S/o- Byasdeo Thakur, R/o-Laliyahi, P.O+Thana+District-Katihar State-Bihar and Sri Sushil Kumar Bhartiya S/o Sri Murarilal Bhartiya R/o- Bhartiya Road, Sahibganj, Jharkhand
3	Lease Address	: Village – Champa, Thana- Borio, District – Sahibganj, State - Jharkhand
4	Lease Area	: 2.488ha. Acres- 6.15 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 90.0 Lakhs
7	EMP Budget	: Capital: Rs. 13.515Lakhs Recurring: 6.83Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 459263.25 cum 1240010.78 tonnes
10	Mine Life	: 10 years
11	Man power	: 20
12	Water Requirement	: 10.30 ~ 10.50KLD(Drinking: 0.20 KLD, Dust Suppression: 5.20KLD, Plantation: 4.60 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 200KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Ganga River, Approx. 8.0 km towards North direction of mine site.
17	Nearest Habitation	: Champa approx. 170 m towards NW direction as per Google Earth EMP has been submitted.
18	Nearest Railway Station	: Karanpurato Railway station, approx. 7.53 km towards ESE direction.
19	Nearest Airport	: Deoghar Airport, approx. 126.04 km towards SW direction
20	Nearest Forest	: Protected forest Approx. 0.75 km towards East direction of mine site. Protected forest Approx. 0.80 km towards SE direction of mine site.

			Protected forest Approx. 1.15 km towards NE direction of mine site. Dense jungle fairly, Approx. 0.35 km towards South direction of mine site. Dense jungle fairly, Approx. 2.40 km towards SE direction of mine site.
21	Road & Highways	:	SH – 18, Approx. 0.74 km towards East direction NH – 33, Approx. 7.12 km towards North direction.
22	Approach road	:	Approx. 550 m

CO-ORDINATES

1	Latitude	:	From 25°10'10.489" N	To 25°10'17.721" N
2	Longitude	:	From 87°39'52.231"E	To 87°40' 00.179"E

LAND DETAILS

Khata no.	Plot no.
05	112 (P) & 114 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1157/M, dated 21.06.2025.
2	CO	:	The CO, Borio, Sahibganj vide letter no. 749/Ra., dated 05.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 1243/M, dated 09.07.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1300, dated 28.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1425, dated 29.06.2024 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	The DMO, Sahibganj has certified vide memo no. 1241/M, dated 09.07.2025 that this project is mentioned in approved DSR of

			Sahibganj District as a potential area (Page no. 197).
7	Gram Sabha	:	Gram Sabha conducted on 04.10.2024.
8	Mine Plan Approval	:	Approved by DMO, Sahibganj vide Letter No. 1324/M, dated 14.07.2025.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 1242/M, dated 09.07.2025 certified that the proposed project site is situated in Grid no. 26 and further certified that the production is within overall permissible limit in the light of Hon'ble NGT. The DMO also stated that this certificate is issued in the light of order passed by Hon'ble NGT on 22.12.2021 in OA No. 23/2017/EZ, O.A. no. 776/2018 and O.A. no. 373/2019. It also states this certificate is issued in compliance of report of Expert Committee.
10	Qualified Person	:	Shri Sahadev Singh present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.007 Ha	Life of Mine –10years
3	Waste Generation	:	Total 26003cum intercalated waste during the plan period	
4	Stripping Ratio	:	1: 0.11	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	218AMSL to186AMSL	
8	Ground Level Elevation	:	186AMSL	
9	Ultimate Working Depth	:	164AMSL (22m BGL)	
10	Water Table	:	154-149AMSL (32-37m BGL)	
11	Topography of Mine	:	Undulating small hillocks	
12	Explosive Requirement	:	120kg/day	
13	Diesel/Fuel requirement	:	130litre/day	

Production Details

Year	Production of stone		Generation of I/waste in cum	O/B waste in cum	Total waste in cum	Bench R.L
	cum	MT				
1st year	44978	121440	2367	6205	8572	213-194

2nd year	45866	123838	2414	3060	5474	194-182
3rd year	45705	123402	2406	0.00	2406	188-176
4th year	45462	122748	2393	0.00	2393	182-170
5th year	45743	123505	2408	4750	7158	216-188
Total	227754	614933	11988	14015	26003	

Land Use

Pattern of Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	Nil	1.297	2.007(converted in to water reservoir)
Waste Dump	Nil	0.231	comes under mining
Road	Nil	0.001	comes under mining
Crusher	Nil	Nil	Nil
Safety Zone	Nil	0.441 Plantation	0.441 Plantation
Total	Nil	1.97	2.448
Balance	Nil	0.518	-
Grand Total	Nil	2.488	2.448

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.441ha	1103
2	Along Approach Road	:	550m	1100
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
4	Total	:		2303

Note – 10 % of Total plant i.e.230plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	11,51,500	2,90,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		13,51,500	6,83,000

Note: *2303 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,51,500/-

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

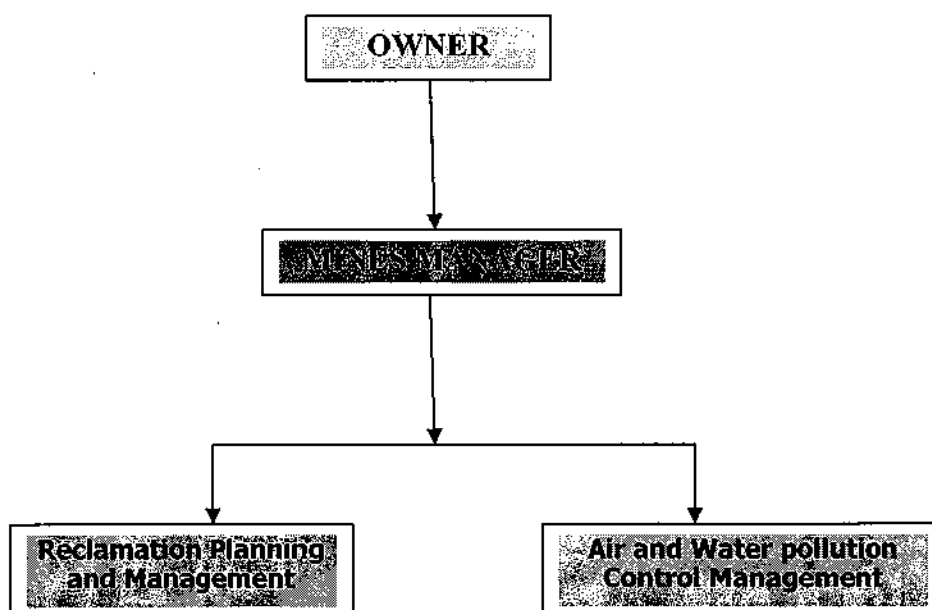
300* 300 = 90000/- ~ 1,50,000/-

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total 26003 cum (14015 cum O.B. and 11988 cum intercalated) waste generated during this plan period. The waste shall propose for temporary dump in South boundary of the applied lease area and some used for hauling and village road maintenance.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote /	May occur if conditions exist. Has occurred within last

	Moderate	3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:**Face Stability**

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in

loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers

- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
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- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Champa Stone Deposit of M/s Kamakhya Stone Works (Partner : Shri Pawan Kumar), Village : Champa, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.488 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. That the Deputy Commissioner, Sahibganj will ensure compliance of the order passed by Hon'ble NGT in OA No. 23/2017/EZ, O.A. no. 776/2018 and O.A. no. 373/2019 in the matter of Syed Arshad Nasar Vs Union of India with Ramchandra Chaurasia Vs State of Jharkhand with Pradeep Kumar Singh Vs State of Jharkhand before grant of mining lease.
- III. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
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photographs.

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- IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

14. Bindri Bandarkola Stone Deposit of M/s Hanuman Stone Works (Partner : Vandana Mishra & Others), Village : Bindri Bandarkola, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.671 Ha).

(Proposal no.: SIA/JH/MIN/ 550163 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity-82251 cum/annum or 222078 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Bindri Bandarkola Stone Deposit
2	Lessee:	:	M/S Hanuman Stone Works Partner – Vandana Mishra & Others W/O Late- Bajrang Kumar Mishra Address- At- Kaswa P.S.- Mehrama,

			Po- Kaswa Dudhichak District- Godda Jharkhand
3	Lease Address	:	Village – Bindri Bandarkola, Anchal- Borio, District – Sahibganj, State - Jharkhand
4	Lease Area	:	2.671ha. Acres- 6.60Acres
5	Type of Land	:	Non-Forest (Raiyati Land)
6	Project Cost	:	Rs. 150.0 Lakhs
7	EMP Budget	:	Capital: Rs. 17.39Lakhs Recurring: 7.70Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	799094cum 2157555tonnes
10	Mine Life	:	10years
11	Man power	:	24
12	Water Requirement	:	11.68 or 12.0KLD(Drinking: 0.24KLD, Dust Suppression: 5.53KLD, Plantation: 5.91 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	200KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Chatro Nadi, Approx. 2.35 km towards SE direction of mine site. Morang Nadi, Approx. 2.50 km towards WNW direction of mine site.
17	Nearest Habitation	:	At 800 meter from project site.
18	Nearest Railway Station	:	Kalian Chak Railway Station, approx. 10.31 km towards East direction.
19	Nearest Airport	:	Deoghar Airport, approx. 120 km towards SW direction.
20	Nearest Forest	:	Dense Mixed JungleApprox. 3.36 km towards NE direction of mine site. Protected forest Approx. 4.2 km towards SW direction of mine site.
21	Road & Highways	:	SH-18 Approx. 2.15 km towards West direction.
22	Approach road	:	Approx. 520 m

CO-ORDINATES

1	Latitude	:	From N 25°3' 17.9624"	To N 25°3' 24.4907"
2	Longitude	:	From E 87°38' 15.4554"	ToE 87°38' 24.023"

LAND DETAILS

Khata no.	Plot no.
29	581 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1149/M, dated 21.06.2025.

2	CO	:	The CO, Borio, Sahibganj vide letter no. 446/Ra., dated 23.05.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 1192/M, dated 21.06.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1435, dated 20.05.2025 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1604, dated 30.05.2025 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	The DMO, Sahibganj has certified vide memo no. 1191/M, dated 21.06.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 182).
7	Gram Sabha	:	Gram Sabha conducted on 19.05.2025.
8	Mine Plan Approval	:	Approved by DMO, Sahibganj vide Memo No. 1598/M, dated 30.08.2025.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 1193/M, dated 21.06.2025 certified that the proposed project site is situated in Grid no. 55 and Hon'ble NGT does not decided the production capacity of that Grid.
10	Qualified Person	:	Shri Vidya Bhushan Mishra present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi Mechanized Method	
2	Quarry Area	:	2.188 ha	Life of Mine –10years
3	Waste Generation	:	Total 54210cum OB and intercalated waste generated during the plan period.	
4	Stripping Ratio	:	1: 0.13	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	228 AMSL to 204 AMSL	
8	Ground Level Elevation	:	204 AMSL	
9	Ultimate Working Depth	:	165 AMSL (39 m BGL)	

10	Water Table	:	135-130 AMSL (69-74m BGL)
11	Topography of Mine	:	Undulating hillocks
12	Explosive Requirement	:	120kg/day
13	Diesel/Fuel requirement	:	130litre/day

Production Details

Year	Production of stone		Overburden incum	Intercalated waste in cum	Totalwaste in cum	Bench R.L
	cum	Tonnes				
1st year	78842	212874	28080	4150	32230	225-213
2nd year	79435	214475	4992	4181	9173	213-207
3rd year	80028	216076	0	4212	4212	207-201
4th year	81065	218877	0	4267	4267	201-195
5th year	82251	222078	0	4329	4329	189-177
Total	401622	1084379	33072	21138	54210	

Land Use

Pattern of Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	Nil	1.531	2.188 (0.244ha area shall bebackfilled, 0.870 ha area shall beconverted into water reservoir and1.074 ha left as dead benches).
Waste Dump	Nil	0.342	Nil (comes under quarry)
Road	Nil	0.004	0.00
Crusher	Nil	Nil	Nil
Safety Zone	Nil	0.483 (Plantation)	0.483 (Plantation)
Total	0.0	2.360	2.671
Unused Area	2.671	0.311	0.00
Total Lease Area	2.671		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.483ha	1208
2	Along Approach Road	:	520m	1040
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
4	Plantation in Backfilled area	:	0.244 ha	610
5	Total	:		2958

Note – 10 % of Total plant i.e.296plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	14,79,000	3,70,000
4	Construction and maintenance of haul road	2,60,000	1,50,000
TOTAL		17,39,000	7,70,000

Note: *2958plants * 500 Rs (for each plants including hedges and fences) = Rs. 14,79,000/-

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- ~ 1,50,000/-

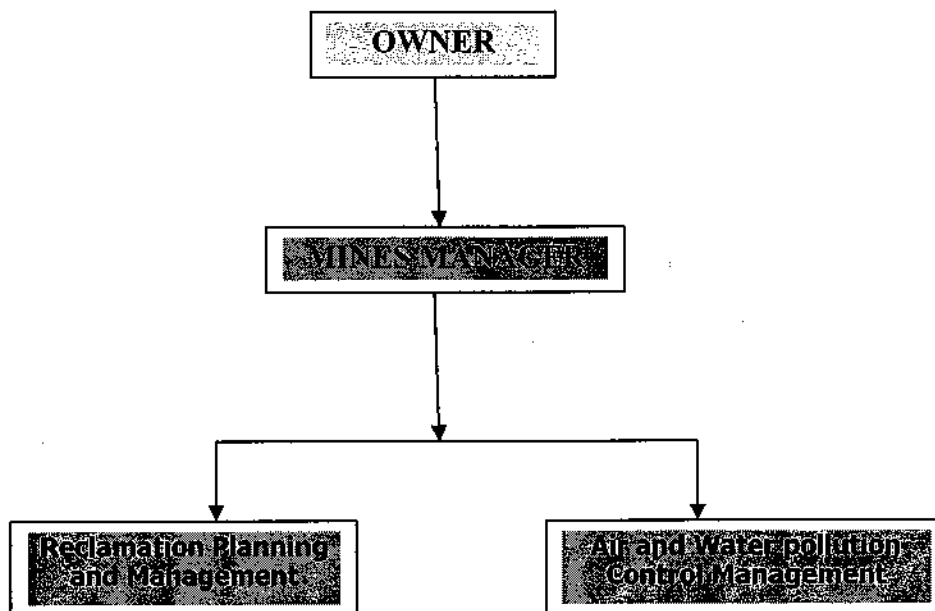
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500

5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total 54210cum OB and intercalated waste generated during this plan period. The waste shall propose for temporary dump in South boundary of the applied lease area and some used for hauling and village road maintenance.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment

C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock	Occasional	Major	6

		(Bodily Injury)			
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the

face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.

- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bindri Bandarkola Stone Deposit of M/s Hanuman Stone Works (Partner : Vandana Mishra & Others), Village : Bindri Bandarkola, Anchal :

Borio, Distt. : Sahibganj, Jharkhand (2.671 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. That the Deputy Commissioner, Sahibganj will ensure compliance of the order passed by Hon'ble NGT in OA No. 23/2017/EZ, O.A. no. 776/2018 and O.A. no. 373/2019 in the matter of Syed Arshad Nasar Vs Union of India with Ramchandra Chaurasia Vs State of Jharkhand with Pradeep Kumar Singh Vs State of Jharkhand before grant of mining lease.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

15. Rebaratu Stone Deposit of Shri Sachchida Nand Singh, Village : Rebaratu, Thana : Satbarwa, Distt. : Palamau, Jharkhand (1.489 Ha).

(Proposal no.: SIA/JH/MIN/ 549988 /2025)

The PAs are not present and hence, this project could not taken up for consideration.

It will be listed for consideration after request by the Project Authorities.

16. Kharani Stone Deposit of M/s Parthvee Mining & Crushing (Partners : (i) Shri Raj Kumar Jaiswal (ii) Shri Sujit Kumar Seth (iii) Shri Nitin Kumar (iv) Shri Manikant Kumar Bharti (v) Shri Saurabh Kumar Bhadani), Village : Kharani, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (2.108 Ha).

(Proposal no.: SIA/JH/MIN/ 548373 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity-117078 cum/annum or 316111 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Kharani Stone Deposit
2	Lessee:	: M/S Parthvee Mining & Crushing Partner 1 – Sri Raj Kumar Jaiswal, S/O Jay Kishan Prasad Jaiswal (2) Sri Sujit Kumar Seth, S/O Late Banshi Ram (3) Sri Nitin Kumar, S/O Sri Raghunand Ram Lohani (4) Sri Manikant Kumar Bharti, S/O Late Binod Kumar (5) Sri Saurabh Kumar Bhadani, S/O Late Arun Kumar Bhadani Address- Village + Po- Isri Bazar, P.S- Nimiaghat, District- Giridih
3	Lease Address	: Mouza – Kharani, Anchal- Tonpchanchi, District – Dhanbad, State- Jharkhand
4	Lease Area	: 2.108ha. Acres- 5.21 Acres

5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 80.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 17.93Lakhs	Recurring: 7.63Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	564072cum	1522994 tonnes
10	Mine Life	:	5 years	
11	Man power	:	24	
12	Water Requirement	:	12.60KLD(Drinking: 0.24KLD, Dust Suppression: 6.47KLD, Plantation: 5.89 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Khatri Nadi, Approx. 7.00 km towards SSE direction of mine site.	
17	Nearest Habitation	:	Pradhankhata 280 meter East as per google earth. EMP has been submitted	
18	Nearest Railway Station	:	Nichitpur Railway station, approx. 2.80 km toward SSE direction	
19	Nearest Airport	:	Deoghar Airport, approx. 78.67 km towards NE direction	
20	Nearest Forest	:	Dense Mixed Jungle, Approx. 2.97 km towards WSW direction of mine site. Parasnath Hill, Approx, 6.72km Towards North direction of mine site.	
21	Road & Highways	:	NH-19, Approx. 3.91km in North direction.	
22	Approach road	:	Approx. 624 m	

CO-ORDINATES

1	Latitude	:	From N23°50'57.748"	To 23°51' 3.268"N
2	Longitude	:	FromE86° 16' 46.220"	To86° 16' 52.501" E

LAND DETAILS

Khata no.	Plot no.
53, 166 & 201	309, 310, 306, 308, 311, 318/1757

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (Loi) has been issued by District Mining Officer, Dhanbad vide letter no. 1035/M, dated 08.07.2025.
2	CO	:	The CO, Topchanchi (Dhanbad) vide letter no. 113, dated 15.02.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. Dufing

			the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Dhanbad vide memo no. 1071/M, dated 15.07.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2179, dated 14.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Dhanbad Forest Division vide letter no. 439, dated 18.02.2025 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DC, Dhanbad vide letter no. 1084 / M, dated 15.07.2025 has informed that this project is part of District Survey Report (DSR) of Dhanbad district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	Gram Sabha conducted on 14.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 1211/M, dated 06.08.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.562 ha	Life of Mine –5 years
3	Waste Generation	:	Total 73248 cum waste generated during the plan period	
4	Stripping Ratio	:	1: 0.12	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	243AMSL to 232AMSL	
8	Ground Level Elevation	:	232AMSL	
9	Ultimate Working Depth	:	194AMSL (38m BGL)	
10	Water Table	:	170-167AMSL (62-65 m BGL)	
11	Topography of Mine	:	Undulating small hillocks	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	90 litre/day	

Production Details

Year	Production of stone		Intercalated wastecum	Overburden in cum	Total waste in cum	Bench R.L
	Cum	MT				
1 st year	110694	298874	5826	28200	34026	236-224
2 nd year	111492	301028	5868	0	5868	224-212
3 rd year	112176	302875	5904	0	5904	212-200
4 th year	112632	304106	5928	15360	21288	230-212
5 th year	117078	316111	6162	0	6162	212-194
Total	564072	1522994	29688	43560	73248	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of the Plan period (Ha)	At conceptual Period (Ha)
Excavation	0.0	1.562 (0.093 ha area shall be backfilled, 1.351 ha converted in to water reservoir & 0.118ha shall be left as dead benches)	1.562 (0.093 ha area shall be backfilled, 1.351 ha converted in to water reservoir & 0.118ha shall be left as dead benches)
Waste dump	0.0	Nil	Nil
Road	0.0	0.00	0.00
Infrastructure	0.0	0.00	0.00
Safety zone	0.0	0.546 (Plantation)	0.546 (Plantation)
Total	0.0	2.108	2.108
Unused Area	2.108	0.00	0.00
Total Lease area	2.108		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.546 ha	1365
2	Along Approach Road	:	624m	1248
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
4	Plantation in Backfilled area	:	0.093 ha	233
5	Total	:	2946	

Note – 10 % of Total plant i.e. 295plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable

species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring	--	
	i) Air		20,000
	ii) Water		15,000
	iii) Soil		8,000
	iv) Noise		7,000
3	Plantation	14,73,000	3,70,000
4	Construction and maintenance of haul road	3,20,000	1,50,000
TOTAL		17,93,000	7,63,000

Note: *2946 plants * 500 Rs (for each plants including hedges and fences)=14,73,000lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90,000/-1,50,000/- (including maintenance)

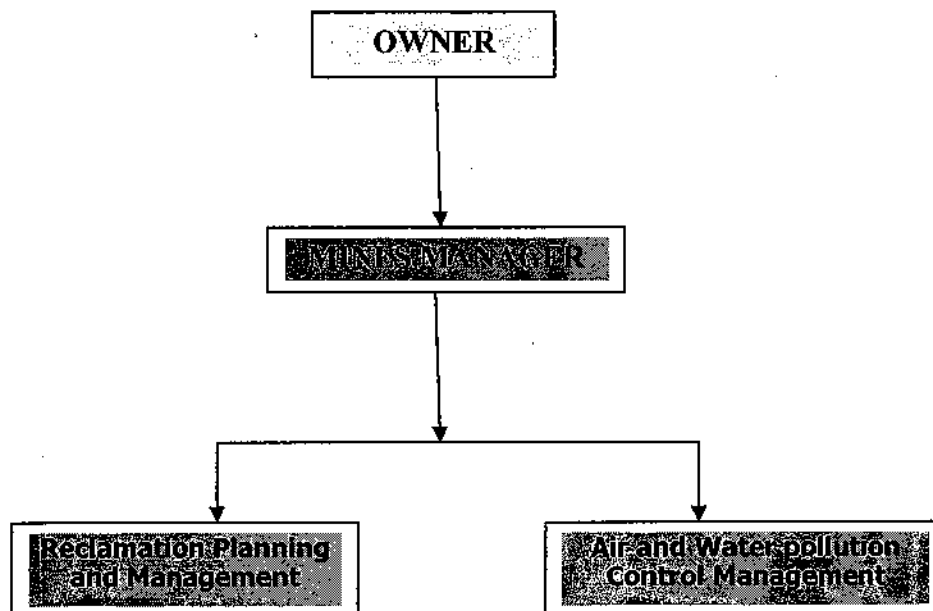
*** 5.0 lakh per kilometer (5,00,000* 0.64km haul road = 3,20,000/-)**

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

It has been calculated that total 73248 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 36624 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 36624 cum in situ 45780 cum loose & 38913 cum compact waste shall be temporary dungeon the western part of the applied lease area up to the third year, during the fourth & Fifth year the generated waste and waste materials of past dumping shall be removed and used for backfilling of exhausted part of the quarry in north eastern part and it will cover about 0.093ha area.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6

6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or

maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.

- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kharani Stone Deposit of M/s Parthvee Mining & Crushing (Partners : (i) Shri Raj Kumar Jaiswal (ii) Shri Sujit Kumar Seth (iii) Shri Nitin Kumar (iv) Shri Manikant Kumar Bharti (v) Shri Saurabh Kumar Bhadani), Village : Kharani, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (2.108 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

17. Mednisare Stone Deposit of M/s Jharkhand Stone Works (Partner : Md. Imran Ali & Md. Mustaq), Mouza : Mednisare, Thana : Gandey, Distt. : Giridih, Jharkhand (0.77 Ha).

(Proposal no.: SIA/JH/MIN/ 533897 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

This project was listed for consideration on 09.05.2025. A complaint, addressed to Chairman, SEIAA was received vide letter dated 20.04.2025 from Shri Bablu Kumar Murmu, S/o Shri Sahebbram Murmu, Soltajpur, P.O. : Chapuadih, Giridih – 815312 alleging that there are various irregularities w.r.t. siting criteria of the mine lease and the Gram Sabha conducted.

Accordingly, the Member Secretary, SEAC had written a letter being no. 05, dated 27.05.2025 to Deputy Commissioner, Giridih alongwith the copy of the complaint received to verify the authenticity of the contents of the complaints.

The Deputy Commissioner, Giridih vide letter no. 1889/Ra., dated 26.07.2025 has provided his clarification to all the allegations in the complaint letter and also further stated that the person in whose name the complaint has written to DC, Giridih that he has not made any such complaint instead some unknown person has made the complaint using his name.

Considering the facts stated by the DC, Giridih all the allegations in the complaint letter are nullified and the project is taken up for consideration.

EC Application for: Proposed Capacity- 16702 cum/annum or 45095 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Mednisare Stone Deposit
2	Lessee:	:	M/s Jharkhand Stone Works Partners -1. Md. Imran Ali, S/o Gafur Ali, Village Baijudih, P.O -Kubri, P.S.- Dhanwar, District Giridih Part .2 Md. Mustaq, S/o Abdul Qayum, Village Nawadih, P.O - Chapuadih, P.S.- Bengabad, District Giridih, State- Jharkhand
3	Lease Address	:	Mouza - Mednisare, Thana- Gandey, District – Giridih, State-Jharkhand
4	Lease Area	:	0.77ha. Acres- 1.90Acres
5	Type of Land	:	Non-Forest (Raiyati Land)
6	Project Cost	:	Rs. 90.0Lakhs
7	EMP Budget	:	Capital: Rs. 8.25Lakhs Recurring: 5.56Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	83452cum 225321 Tonnes

10	Mine Life	:	5years
11	Man power	:	26
12	Water Requirement	:	5.56 ~ 6.00 KLD (Drinking: 0.26KLD, Dust Suppression: 2.8KLD, Plantation: 2.5 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	200 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Jayanti River, Approx 1.59 km towards North direction.
17	Nearest Habitation	:	Approx. 350 meter in SE direction as per Co Letter, EMP has been Submitted
18	Nearest Railway Station	:	Jagdishpur Railway Station, approx. 9.18 km towards NNE direction
19	Nearest Airport	:	Deoghar Airport, approx. 35.61 km towards NE direction.
20	Nearest Forest	:	Protected forest, Approx. 1.27km towards NNW direction Protected Forest, Approx. 0.67 km towards NNW direction
21	Road & Highways	:	NH-114A, Approx 9.49 km towards NNE direction.
22	Approach Road	:	Approx 250meter

CO-ORDINATES

1	Latitude	:	From 24°11'42.58140"N	To 24°11'44.97770"N
2	Longitude	:	From 86°29'03.37506"E	To 86°29'08.18272"E

LAND DETAILS

Khata no.	Plot no.
32 & 39	1753 & 1754 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Giridih vide letter no. 786/M, dated 12.08.2024.
2	CO	:	The CO, Gandey (Giridih) vide letter no. 324, dated 25.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyani and also mentioned that the habitation (07 – 08 houses) at a distance 350 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO Cluster	:	DMO, Giridih vide memo no. 855/M, dated 12.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.

4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1262, dated 29.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Giridih East Forest Division vide letter no. 2295, dated 27.06.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Giridih District (Page no. 71, Sl. no. 138).
7	Gram Sabha	:	BDO, Gandey (Giridih) vide letter no. 1221, dated 27.06.2024 informed that Gram Sabha conducted on 19.06.2024.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Koderma vide Letter No. 18, dated 25.01.2025.
9	Qualified Person	:	Shri Tapan Kumar Chkaravarty through e-mail dated 12.09.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized method
2	QuarryArea	:	0.51 Ha Life of Mine-5 years
3	Waste Generation	:	Total 5497 cum of soil shall be generated during the plan period.
4	Stripping Ratio	:	1: 0.06
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	286AMSL to 284AMSL
8	Ground Level Elevation	:	284AMSL
9	Ultimate Working Depth	:	262AMSL (22m BGL)
10	Water Table	:	249-248AMSL (35-36 m BGL)
11	Topography of Mine	:	Undulating topography
12	Explosive Requirement	:	90 kg/day
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Year	Production of stone in Tonnes	Production of stone in Cum	Total Waste in Cum	Bench AMSL
1 st year	45095	16702	3382	286-280
2 nd year	45074	16694	0	280-274

3 rd year	45017	16673	2115	286-268
4 th year	45004	16668	0	280-262
5 th year	45082	16697	0	274-262
Total	225321	83452	5497	

Land Use

Land Utilization	Existing Land use (Ha)	At the end of Plan period (ha)	At conceptual Period (ha)
Road	0.01	-	-
Quarry	Nil	0.51	0.51 (Water Reservoir)
Green Belt + Road	Nil	0.26 (Plantation)	0.26 (Plantation)
Total Area in Use	0.01	0.77	0.77
Balanced Unused Area	0.76	0.00	0.00
Total Applied Area	0.77	0.77	0.77

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.26 ha	650
2	Along Approach Road	:	250 m	500
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
Total				1250

Note – 10 % of Total plant i.e.125plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air l) Water li) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	6,25,000	1,56,250
4	Construction and maintenance of haul road	2,00,000	1,50,000
Total		8,25,000	5,56,250

Note: *1250 plants * 500 Rs (for each plants including hedges and fences) = Rs. 6.25 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-or 1,50,000-(including maintenance)

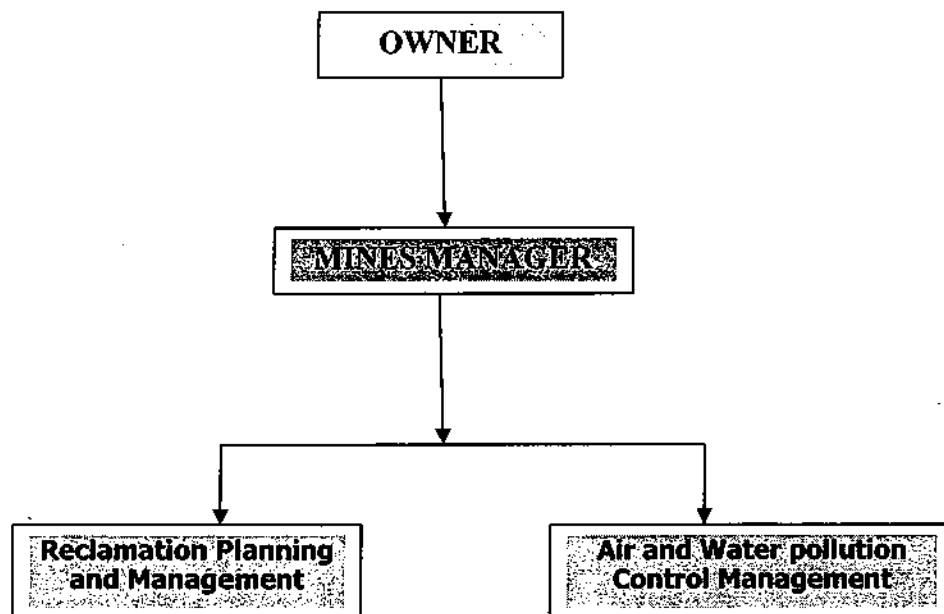
* 5.0 lakh per kilometer (500000 * 0.25 km haul road = 1,25,000 /- or 2,00,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 5497 cum of soil shall be generated which shall be stored at dump site in Eastern portion of lease area in 1st& 2nd year of the plan period and shall be used for haul road dressing, backfilling during 3rd year of the plan & plantation during the plan period.

**Organization Structure**

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within

		last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale

1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation

- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how

risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Mednisare Stone Deposit of M/s Jharkhand Stone Works (Partner : Md. Imran Ali & Md. Mustaq), Mouza : Mednisare, Thana : Gandey, Distt. : Giridih, Jharkhand (0.77 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and

thereafter at annual interval for PLFT, Audiometry and other required tests .
Summary findings of same to submitted along with 6 monthly compliance.

- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

18. Thakurnahan Stone Deposit of Shri Laldhari Yadav, Village : Thakurnahan, Thana : Poriyahat, Distt. : Godda, Jharkhand (1.785 Ha).

(Proposal no.: SIA/JH/MIN/ 549723 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity-84645 cum/annum or 228542 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Thakurnahan Stone Deposit
2	Lessee:	: Sri Laldhari Yadav S/o Sri Dhano Yadav Address- Barodhiya, P.O.+P.S. – Simaltala, District – Jamui , State- Bihar Present Address- C/o Sri Babulal Yadav,Vill- Kamrandal, P.O.- Sleya, Thana- Podayahat, District- Godda, Jharkhand
3	Lease Address	: Village – Thakurnahan, Anchal- Poriyahat, District – Godda, State- Jharkhand
4	Lease Area	: 1.785ha. Acres- 4.41 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 90.0Lakhs
7	EMP Budget	: Capital: Rs. 25.50Lakhs Recurring: 8.68Lakhs / year

8	New or Expansion	:	New
9	Mineable Reserves	:	403115.55cum 1088412Tonnes
10	Mine Life	:	5year.
11	Man power	:	21
12	Water Requirement	:	14.91~ 15.0 KLD (Drinking: 0.21 KLD, Dust Suppression: 7.15KLD, Plantation: 7.55 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	200 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Chandan Dam, Approx, 12.00 km, towards W direction.
17	Nearest Habitation	:	540 meter as per google earth.
18	Nearest Railway Station	:	Hansdih Railway station, approx. 6.67 km towards SSE direction.
19	Nearest Airport	:	Deoghar Airport, approx. 41.92 km towards SW direction.
20	Nearest Forest	:	Fairly mixed jungle, Approx. 2.68 km towards East direction of mine site Protected forest, Approx. 2.19km towards WSW direction of mine site Protected Forest, Approx. 3.02 km towards North direction of mine site
21	Road & Highways	:	NH-133E, Approx. 0.67 km in East direction.
22	Approach Road	:	Approx 650meter

CO-ORDINATES

1	Latitude	:	From 24°39' 47.229"N	To 24°39' 55.515" N
2	Longitude	:	From 87°03' 14.389" E	To 87°03' 19.781" E

LAND DETAILS

J.B. no.	Plot no.
25	01 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Godda vide memo no. 982/M, dated 30.09.2024.
2	CO	:	The CO, Poraiyahat vide letter no. 454/Ra., dated 13.04.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.

3	DMO Cluster	:	DMO, Godda vide memo no. 113/M, dated 10.02.2025 certified that 01 other mining lease area (5.65 Acre) exists within 500 meters radius from proposed project site and total area is 10.06 Acre.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 984, dated 21.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Godda Forest Division vide letter no. 1203, dated 08.08.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Godda District (Page no. 56, Sl. no. 06).
7	Gram Sabha	:	Gram Sabha conducted on 09.02.2022.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 141/DDM, dated 04.08.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi- Mechanized method	
2	QuarryArea	:	1.135 Ha	Life of Mine–5 year.
3	Waste Generation	:	Total 36553cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.04	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	167 AMSL to 155AMSL	
8	Ground Level Elevation	:	155AMSL	
9	Ultimate Working Depth	:	115AMSL (40m BGL)	
10	Water Table	:	100-97AMSL (55-58 m BGL)	
11	Topography of Mine	:	Flat Topography	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	90 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in tonnes	Overburden in cum	Intercalated waste in cum	Total waste in cum	Bench AMSL
1 st Year	77771	209981	10800	4093	14893	163-151
2 nd Year	78386	211643	0	4126	4126	151-139
3 rd Year	79412	214413	4536	4180	8716	139-145
4 th Year	82901	223832	0	4363	4363	145-127
5 th Year	84645	228542	0	4455	4455	127-115
Total	403115	1088412	15336	21217	36553	

Land Use

Land Utilization	Existing Land use (Ha)	At the end of Plan period (ha)	At conceptual Period (ha)
Excavation	0.0	1.135 (0.300ha area shall be backfilled, 0.565ha converted into water reservoir & 0.270 ha shall be left as dead benches)	1.135 (0.300ha area shall be backfilled, 0.565ha converted into water reservoir & 0.270 ha shall be left as dead benches)
Waste Dump	0.0	Nil (comes under quarry)	Nil
Road	0.0	Nil (comes under quarry)	0.0
Infrastructure (Crusher)	0.0	0.0	0.0
Safety zone	0.0	0.650 (Plantation)	0.650 (Plantation)
Total	0.0	1.785	1.785
Unused Area	1.785	0.00	0.00
Total Lease area	1.785		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.650ha	1625
2	Along Approach Road	:	650m	1300

3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
4	Plantation in Backfilled area	:	0.30 ha	750
5	Plantation in Dead Bench	:	0.27 ha	675
6	Total	:	4450	

Note – 10 % of Total plant i.e.378plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air I) Water ii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	22,25,000	4,75,000
4	Construction and maintenance of haul road	3,25,000	1,50,000
Total		25,50,000	8,68,000

Note: *4450 plants * 500 Rs (for each plants including hedges and fences) = Rs. 22,25,000lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- or 150000/- (including maintenance)

*** 5.0 lakh per kilometer (500000 * 0.65 km haul road = 3, 25,000/-)**

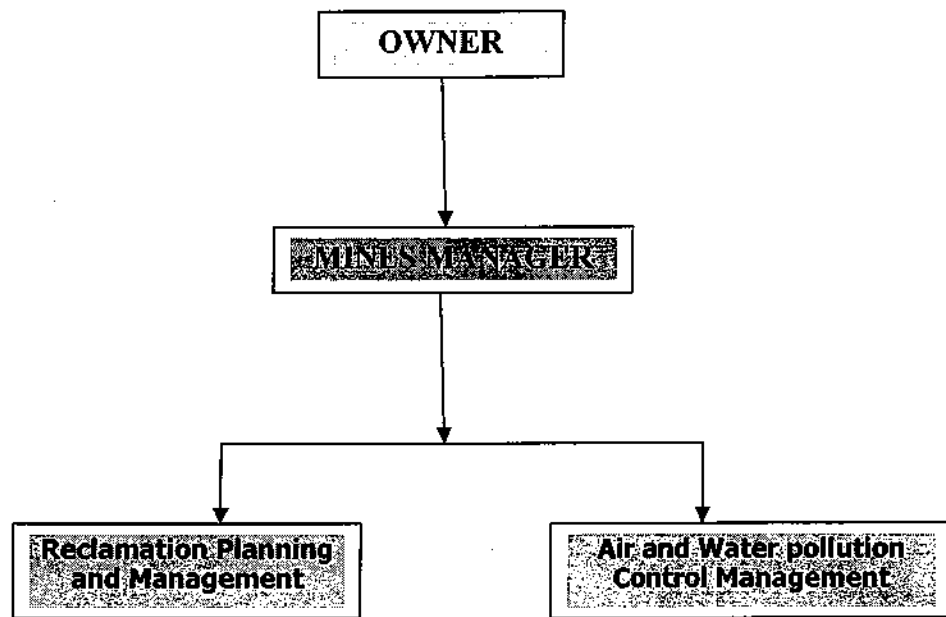
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000

2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total 36553 cum in - situ waste shall be generated during this plan period. The 50% of waste generated during this plan period i.e. 18276 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 18276 cum in situ 22845.38 cum loose & 19418.57 cum compact waste shall be used for dumping and backfilling.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.

C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is **"Acceptable"**

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling

- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine

- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.

- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Thakurnahan Stone Deposit of Shri Laldhari Yadav, Village : Thakurnahan, Thana : Poriyahat, Distt. : Godda, Jharkhand (1.785 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



Day 4 : 12th, 2025 [Friday]

Consideration of proposals :

1. Ranjar Stone Deposit of M/s Hemwant Kumar Singh (Prop. : Shri Hemwant Kumar Singh),
Village : Ranjar, Thana : Rajnagar, Distt. : Saraikella-Kharsawan, Jharkhand (1.622 Ha).

(Proposal no.: SIA/JH/MIN/ 550049 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity-22509 cum/annum or 60775 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Ranjar Stone Deposit
2	Lessee:	:	M/S Hemwant Kumar Singh Proprietor: Shri Hemwant Kumar Singh At- Flat No. – B5/F3/A Mooncity Dimma Road Mango, Jamshedpur, Jharkhand
3	Lease Address	:	Mouza – Ranjar, Thana-Gobindpur, District Saraikela- Kharsawan, State- Jharkhand
4	Lease Area	:	1.622 ha. Acres- 4.01 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)
6	Project Cost	:	Rs. 90.0 Lakhs
7	EMP Budget	:	Capital: Rs. 13.80Lakhs Recurring: 5.00Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	227384.4 cum 613937.88 tonnes
10	Mine Life	:	10 years
11	Man power	:	21
12	Water Requirement	:	10.05 ~ 10.10 KLD(Drinking: 0.21 KLD, Dust Suppression: 5.12KLD, Plantation: 4.72 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	200KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Kharkai river, Approx. 4.65 km towards NNW direction of mine site.
17	Nearest Habitation	:	Dundu, Approx. 0.30 km towards NW direction. EMP has been submitted.
18	Nearest Railway Station	:	Haludpukur Railway station, approx. 11.64 km toward ESE direction
19	Nearest Airport	:	Birsa Munda Ranchi Airport, approx. 103.88 km towards NW

			direction.
20	Nearest Forest	:	Protected Forest Approx. 9.29 km towards NE direction of mine site.
21	Road & Highways	:	NH-220, Approx. 4.69 km. in SE direction.
22	Approach road	:	Approx. 300 m

CO-ORDINATES

1	Latitude	:	From N22°39'56.474"	To N22°40'4.109"
2	Longitude	:	From E86°3'24.888"	To E86°3'32.755"

LAND DETAILS

Khata no.	Plot no.
02, 81, 80, 04, 02, 74 & 17	744 (P), 755 (P), 754, 741, 742, 753 & 758 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Saraikella-Kharsawan vide letter no. 525/M, dated 28.04.2025.
2	CO	:	The CO, Rajnagar vide letter no. 584, dated 21.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatian. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Saraikella-Kharsawan vide letter no. 914/M, dated 01.07.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 3579, dated 23.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Saraikella Forest Division vide letter no. 1883, dated 07.12.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Saraikella-Kharsawan District (Page no. 70, Sl. no. 13).

7	Gram Sabha	:	BDO, Rajnagar vide letter no. 951, dated 29.08.2024 informed that Gram Sabha conducted on 27.07.2024.
8	Mine Plan Approval	:	Approved by DMO, Saraikella-Kharsawan vide Letter No. 1095/Mining, dated 18.08.2025.
9	Qualified Person	:	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.958 ha	Life of Mine –10 years
3	Waste Generation	:	Total 16905cum OB and intercalated waste during the plan period.	
4	Stripping Ratio	:	1: 0.55	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	166 AMSL to 164 AMSL	
8	Ground Level Elevation	:	164 AMSL	
9	Ultimate Working Depth	:	148 AMSL (16 m BGL)	
10	Water Table	:	138-133AMSL (26-31 m BGL)	
11	Topography of Mine	:	Undulating small hillocks	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	130litre/day	

Production Details

Year	Production of stone		Generation of l/waste in cum	O/B waste in cum	Total waste in cum	Bench R.L
	cum	MT				
Ist Year	22321	60267	1175	5478.00	6653	165-160
IInd Year	22447	60606	1181	660	1841	165-154
IIIrd Year	22509	60775	1185	4860	6045	160-160
IVth Year	22469	60667	1183	0	1183	163-154
Vth Year	22469	60667	1183	0	1183	160-154
Total	112215	302982	5907	10998	16905	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of plan Use period (Ha)	At Conceptual period
Quarry	Nil	0.702	0.958 (0.958ha area shall be converted into water reservoir)
Road	Nil	0.010	Comes under mining
Waste Dump	Nil	0.246	Comes under mining

484

Safety zone	Nil	0.664 Plantation	0.664 Plantation
Total	Nil	1.622	1.622

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.664 ha	1660
2	Along Approach Road	:	300 m	600
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note – 10 % of Total plant i.e.236 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring	--	20,000
	i) Air		15,000
	ii) Water		8,000
	iii) Soil		7,000
	iv) Noise		
3	Plantation	11,80,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		13,80,000	5,00,000

Note: *2360 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,80,000/-

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90,000/-1,50,000/- (including maintenance)

* 5.0 lakh per kilometer (5,00,000* 0.30km haul road = 1,50, 000 or 2,00,000/-)

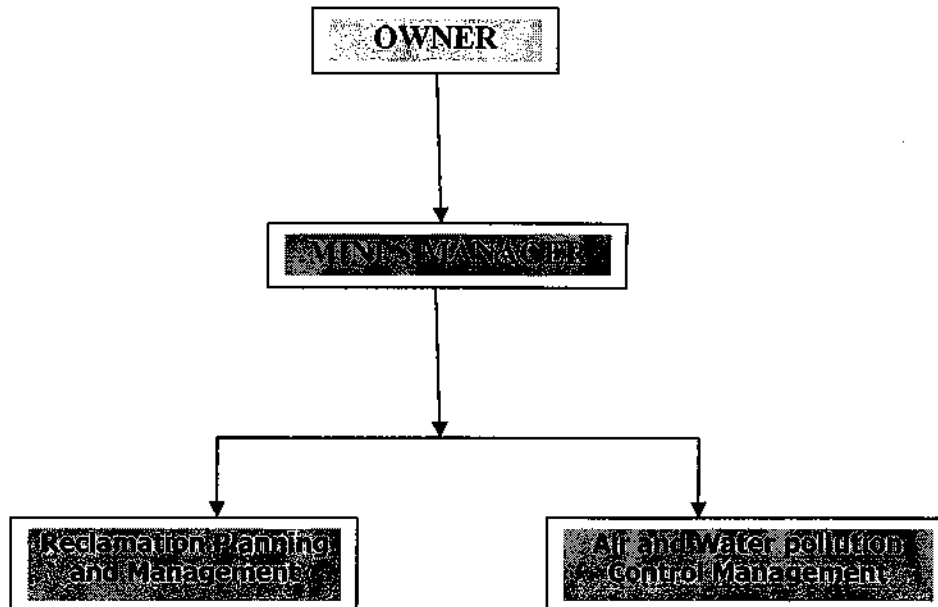
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000

3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total 16905 cum OB and intercalated waste during the plan period. The waste shall propose for temporary dump in South boundary of the applied lease area and some used for hauling and village road maintenance.



Organization Structure

Water Quality Management

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- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
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The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

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Signature

Signature A

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers

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- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ranjar Stone Deposit of M/s Hemwant Kumar Singh (Prop. : Shri Hemwant Kumar Singh), Village : Ranjar, Thana : Rajnagar, Distt. : Saraikella-Kharsawan, Jharkhand (1.622 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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2. Ramnathpur Stone Deposit of M/s Mandhan Minerals Corporation, Mouza : Ramnathpur, Thana : Malpahari, Distt.: Pakur, Jharkhand (2.260 Ha).

(Proposal no.: SIA/JH/MIN/546557 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 117th meeting held on 27.09.2024 - 01.10.2024 and SEIAA, Jharkhand has approved the ToRs in 117th meeting held on 15th & 16th October, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3246/2024/303, dated 18.10.2024. The final EIA / EMP submitted by PP to SEAC on 18.08.2025.

EC Application for: Proposed Capacity- 50245.50 cum/annum or 150736.50 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Ramnathpur Stone Deposit
2	Lessee:	: M/S Mandhan Minerals Corporation, (Partner – Sri Anil Tanwani)
3	Lease Address	: Mauja – Ramnathpur, Thana – Malpahari, District – Pakur, Jharkhand
4	Lease Area	: 2.260 Ha Acres- 5.585 Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 70Lakhs
7	EMP Budget	: Capital: Rs. 28.10 lakhs Recurring: Rs. 12.70 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 351150.40 cum Tonnes: 1053451.20 tones
10	Mine Life	: 7years
11	Man power	: 41
12	Water Requirement	: 14.95-15.0 KLD (Drinking: 0.41 KLD,Dust Suppression: 5.17KLD, Plantation:9.37KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Torai Nadi, Approx. 9.40 km. in NW direction of mine site
17	Nearest Habitation	: Approx. 0.30Km EMP has been submitted.
18	Nearest Rail Station	: Nagarnabi Railway station, approx. 4.63 km in East direction.
19	Nearest Air Port	: Deoghar Airport, approx. 114.68 km towards W direction

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20	Nearest Forest	:	Protected Forest, Approx. 1.25 km. in South direction of mine site. Protected Forest, Approx. 3.95 km. in West direction of mine site.
21	Road & Highways	:	NH-133A, Approx. 5.29 km in North direction
22	Need Based SE Budget	:	2 Lac/Annum

CO-ORDINATES

1	Latitude	From 24°35'17.72365"N	To 24°35'25.11676"N
2	Longitude	From 87°49'15.47893"E	To 87°49'21.99515"E

LAND DETAILS

Khata no.	Plot no.
22	407, 408 (P), 409 (P), 459 (P), 470, 471, 472, 473, 474, 475, 478 (P), 479, 482, 483 (P) & 487
32	485 & 486

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 365/M, dated 16.03.2024.
2	CO	:	The CO, Pakur vide letter no. 1308/Ra., dated 31.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II and also mentioned that the habitation of 21 houses at a distance of 300 meters, pond at 411 meters and Nala at 475 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO Cluster	:	DMO, Pakur vide memo no. 1297/M, dated 16.08.2024 certified that 04 other mining lease area (5.686 Acre, 4.81 Acre, 6.28 Acre & 3.66 Acre) exists within 500 meters radius from proposed project site and total area is 26.021 Acre or 10.53 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 353, dated 02.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Pakur Forest Division vide memo no. 288, dated 08.02.2023 certified that the distance of forest is 1431 meters from proposed project site.

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6	DSR	:	The DMO, Pakur has been certified vide memo no. 1298/M, dated 16.08.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 84, Page no. 150).
7	Gram Sabha	:	BDO, Pakur vide letter no. 2271/Vi., dated 28.12.2022 informed that Gram Sabha conducted on 16.12.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1073/M, dated 16.07.2024.
9	Public Hearing	:	Public Hearing conducted on 14.07.2025.
10	Baseline Monitoring Period	:	October, 2024 to December, 2024.
11	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanised method	
2	Quarry Area	:	1.622 ha	Life of Mine – 7Years
3	Waste Generation	:	9158.00 cum of Gritty Soil and 13212.60 cum of Intercalated Waste	
4	Stripping Ratio	:	1: 0.08	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	52 AMSL to 62AMSL	
8	Ground Level Elevation	:	52 AMSL	
9	Ultimate Working Depth	:	Up to 19 AMSL (33 mgbl)	
10	Water Table	:	Up to 12 AMSL (40 mbgl)	
11	Topography of Mine	:	The area represents a moderately sloping land with rock mass of Basalt.	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production of Stone		Removal of Gritty Soil		Intercalated Waste	Bench AMSL
	in cum	in tons	in cum	in tons	in cum	
1st	50156.20	150468.60	2700.00	4050.00	2639.80	61 – 55
2nd	50230.30	150690.90	4480.00	6720.00	2643.70	55 – 49
3rd	50245.50	150736.50	1118.00	1677.00	2644.50	55 – 49
4th	50230.30	150690.90	860.00	1290.00	2643.80	49 – 43
5th	50175.20	150525.60	000.00	000.00	2640.80	43 – 37
Total	251037.50	753112.50	9158.00	13737.00	13212.60	

Land Use

Type of Land	Present Land Use (In Ha)	At the End of the Plan Period (In Ha)	At the End of Mine (In Ha.)	Conceptual Period (In Ha)			
				Back fill	Stone pitching wall	Water Body	Plantation
Quarry	--	1.622 (Including Backfilling 0.180 Ha. & stone pitching wall 0.007Ha.)	1.622 (Including Backfilling 0.286 Ha. & stone pitching wall 0.007Ha.)	0.180	0.007	0.791	0.644 (Dead bench)
Safety zone	--	0.638 (Plantation)	0.638 (Plantation)	--	--	--	0.638
Road	0.013	--	--	--	--	--	--
Total Area in use	0.013	2.260	2.260	0.180	0.007	0.791	1.282
Balanced Unused Area	2.247	--	--	--	--	--	--
Total Applied Area	2.260	2.260	2.260	2.260			

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. Of Trees
1	Safety Zone	:	0.638 ha	1600
2	Along Approach Road	:	330 m	660
3	Plantation in Backfilled area	:	0.180	450
4	Plantation in Dead bench	:	0.644	1610
5	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
6	Total		4420	

Note – 10 % of Total plant i.e.442 plants will be planted as EK Ped Maa K Naam

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Summary of Baseline Data:

Monitoring season - October 2024 to December 2024

Parameter	No. of Locations	Environmental Baseline Study
Ambient Air Quality Monitoring	8 locations	PM2.5- 29.21 μ g/m ³ to 52.19 μ g/m ³ PM10- 68.32 μ g/m ³ to 88.71 μ g/m ³ SO2- 5.78 μ g/m ³ to 21.59 μ g/m ³ NO2- 8.39 μ g/m ³ to 23.8 μ g/m ³
Noise level monitoring	8 locations	During daytime- 51.8 to 59.2 dB(A) During Night time- 39.4 to 45.6 dB(A) Results were found within permissible limits
Water samples	Surface water – 2 locations	All parameters like Dissolved Oxygen (7.1 to 7.4 mg/l), pH (7.28- 7.76), Chloride (48.8- 51.2 mg/l), COD (24.0-26.0 mg/l), BOD (5.4-5.6 mg/l), Alkalinity as CaCO ₃ (165-172 mg/l), Total Hardness (165.0-178.0 mg/l) etc. are found within permissible limits
	Ground water- 5 locations	All parameters like TDS (419- 528mg/l), pH (7.21 to 7.84), Hardness (228-292 mg/l), Alkalinity as CaCO ₃ (225-280 mg/l), etc. are found within

		permissible limits & fit for consumption.
Soil Samples	5 locations	pH- 7.60- 7.78 Conductivity- 354.0 to 382.0µmhos/cm Phosphorous - 10.26 – 12.02 mg/kg Magnesium – 92.04 – 170.02 mg/kg Potassium – 78.06 – 96.04 mg/kg
EB	-	No endangered Species found in the study area.

Public Hearing (Action Plan) –

S. No.	Issue	Reply	Action Plan
1	Employment	He said that local people should be given employment so that their migration can be stopped.	About 41 persons will be hired as per their qualifications. Remuneration will be given as Government Norms.
2	Primary Education	Assured to make arrangements for primary education	Rs 1.0 lakh will be spent as recurring cost for education of children from economically poor families, which is also included in the EMP cost. It will be provided during 1 st year of mining.
3	Sports material	Project Proponent Assured to make arrangements for sports material,	Budget for Rs. 1.0 lakh will be spent as Capital cost for Sports Material/Kit Distribution. It will be provided during 1 st year of mining.
4	Drinking water	Arrangements for drinking water under CSR Budget	Arrangement of 02 Hand Pump with deep boring for water facility will be done for which total Rs. 2.50 lakh will be spent as capital cost and Rs 0.50 lakh will be spent as recurring cost which has also been included in EMP Cost. It will be provided during 1 st year of mining.
5	Higher education.	Assured that further education will be supported	Rs 1.0 lakh will be spent as recurring cost for education of children from economically poor families, which is also included in the EMP cost. It will be provided during 1 st year of mining.
6	Festival	assured that all the above demands will be fulfilled under CSR Budget.	Rs. 1.0 lakh will be spent to provide assistance during festivals which is also included in the EMP cost. It will be provided during 1 st year of mining.
7	water sprinkling	water sprinkling work will be done,	Total Rs. 2.0 lakh will be spent as recurring cost for Pollution Control & Dust

			Suppression. It will be provided during 1 st year of mining.
8	Stationary Material	Pens and notebooks will be distributed for the education of rural children	Rs 1.0 lakh will be spent as recurring cost for education of children from economically poor families, which is also included in the EMP cost. It will be provided during 1 st year of mining.
9	Road Repair	road repair work will be done under CSR Budget.	Road repairing & strengthening Rs. 2.0 lakh will be invested as the Capital Cost and every year Rs. 1.50 lakh every year will be spent as recurring cost for haul road maintenance. It will be provided during 1 st year of mining.
10	Auto	Auto for taking rural children to school will be made,	Rs 1.0 lakh will be spent as recurring cost for arranging Toto/E-rickshaw on rent for taking rural children to school. It will be provided during 1 st year of mining.
11	Sports play grounds	Leveling the play ground for sports for the youth	Rs 0.50 lakh will be spent as recurring cost for arrangement of leveling of playground for sports for youth or for development work. It will be provided during 1 st year of mining.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	4,00,000
2	Baseline Monitoring	--	
	i) Air		50,000
	ii) Water		40,000
	iii) Soil		20,000
	iv) Noise		10,000
3	Plantation	22,10,000	2,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
Suggestions As per Public Hearing			
5	Budget for education of children from economically poor families		1,00,000

6	Budget for Sports Material/Kit Distribution	1,00,000	-
7	Budget for Arrangement of 02 Hand Pump with deep boring for water facility	2,50,000	50,000
8	Budget to provide support during festivals and times of joy and sorrow	-	1,00,000
9	Budget for arranging Toto/E-rickshaw on rent for taking rural children to school.		1,00,000
10	Budget for arrangement of leveling of playground for sports for youth or for development work		50,000
11	Budget for fencing/boundary wall of Jaher Thana.	50,000	-
Total		28,10,000	12,70,000

Note: *4420 plants * 500 Rs (for each plants including hedges and fences)= 22.10 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300*300 = 90,000/-or 150000/- (including maintenance)

SE Need based Survey detail

S. No.	Community Priority	Status	Need of the Community	Yearly Budget, Rs. In lacks
1.	Medical & Health Facilities	Very Poor	Health Camp for routine check-up, and medicine distribution	1.00
2.	Drinking Water	Average	Hand Pump and Bore wells required	1.00
4.	Social Issues	Un-employment	Employment will be provided based on capability and experience	
TOTAL				2.00

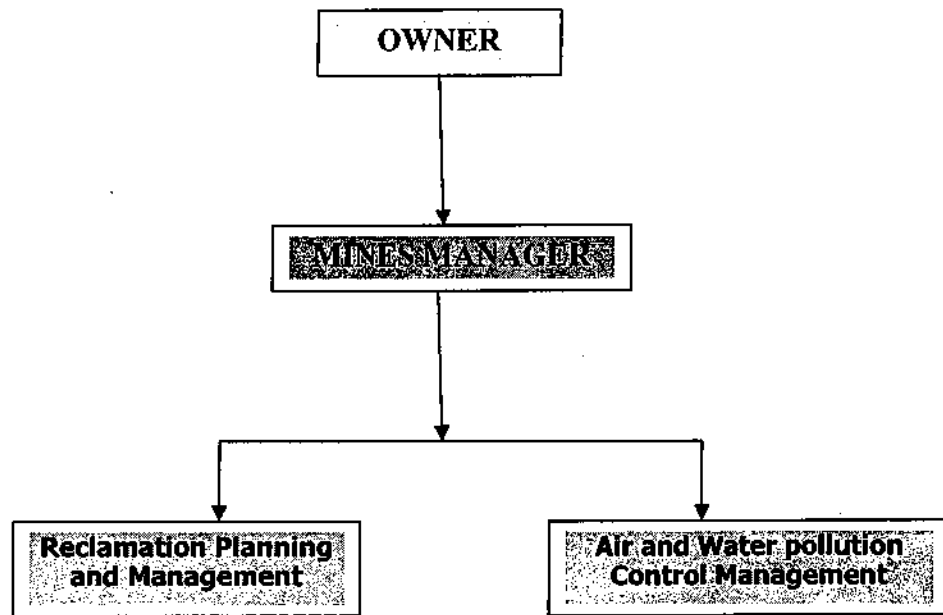
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly

3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 9158.00 cum of Gritty Soil and 13212.60 cum of Intercalated Waste will be generated during the plan period.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

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Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.

C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5

3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is “Acceptable”

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.



Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container

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- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

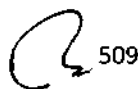
- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.

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- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ramnathpur Stone Deposit of M/s Mandhan Minerals Corporation, Mouza : Ramnathpur, Thana : Malpahari, Distt.: Pakur, Jharkhand (2.260 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

3. Bastadih Stone Deposit of M/s Mahadev Stone Works (Partners : Shri Santosh Kumar Bhagat & Shri Shivdhar Madaiya), Village : Bastadih, Anchal : Hiranpur, Distt. : Pakur, Jharkhand (2.545 Ha).

(Proposal No : SIA/JH/MIN/ 547342/2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 118th meeting held on 22 - 26.10.2024 and SEIAA, Jharkhand has approved the ToRs in 118th meeting held on 28th & 29th November, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3317/2024/425, dated 09.12.2024. The final EIA / EMP submitted by PP to SEAC on 02.09.2025.

EC Application for: Proposed Capacity- 48488.00 cum/year or 130917.60 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Bastadih Stone Deposit
2	Lessee:	: M/s Mahadev Stone Works, (Partners – Sri Santosh Kumar Bhagat & Sri ShivdharMadaiya)
3	Lease Address	: Village – Bastadih, Anchal – Hiranpur, District – Pakur, State – Jharkhand
4	Lease Area	: 2.545 Ha Acres- 6.29Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 80Lakhs
7	EMP Budget	: Capital: Rs. 37.265 lakhs Recurring: Rs. 13.90Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.:471739.6 cum Tonnes:1273696.92 tones
10	Mine Life	: 9.72 or 10years
11	Man power	: 19
12	Water Requirement	: 17.11 ~17.15 KLD (Drinking: 0.19 KLD,Dust Suppression:7.285KLD, Plantation:9.64KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Torai Nadi, approx. 6.90 km towards NW direction
17	Nearest Habitation	: Approx. 350meter EMP submitted
18	Nearest Rail Station	: Pakur Railway station, approx. 14.40 km towards ENE direction
19	Nearest Air Port	: Deoghar Airport, approx. 104.10 km towards WSW direction

20	Nearest Forest	:	Protected Forest, Approx. 4.80 km. in NE direction of mine site. Protected Forest, Approx. 3.40 km. in NE direction of mine site. Protected Forest, Approx. 3.60 km. in SE direction of mine site. Protected Forest, Approx. 3.95 km. in SW direction of mine site. Protected Forest, Approx. 3.85 km. in WNW direction of mine site.
21	Road & Highways	:	NH- 133A - Approx. 11.50 km in ENE direction.
22	Need Based SE Budget	:	2 Lac/Annum

CO-ORDINATES

1	Latitude	From 24°35'51.8656" N	To 24°35'59.2973" N
2	Longitude	From 87°42'59.7339" E	To 87°43'09.6933" E

LAND DETAILS

Khata No.	Plot No.
03	103(P)
12	104(P)
17	139
27	111
25	108, 109& 110

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1739/M, dated 15.10.2024.
2	CO	:	The CO, Hiranpur vide letter no. 473/Ra., dated 12.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II and also mentioned that the habitation of 19 houses at a distance of 350 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO Cluster	:	DMO, Pakur vide memo no. 1795/M, dated 18.10.2024 certified that 02 other mining lease area (5.20 Acre & 7.09 Acre) and 01 LOI (7.00 Acre) exists within 500 meters radius from proposed project site and total area is 25.58 Acre or 10.35 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1211, dated 19.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Pakur Forest Division vide letter no. 805, dated 13.05.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project

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		site.
6	DSR	: The DMO, Pakur has been certified vide memo no. 1796/M, dated 18.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 116, Page no. 119).
7	Gram Sabha	: BDO, Hiranpur vide letter no. 605/Vi., dated 30.08.2022 informed that Gram Sabha conducted on 29.07.2022.
8	Mine Plan Approval	: Approved by District Mining Officer, Pakur vide Memo No. 1823/M, dated 19.10.2024.
9	Public Hearing	: Public Hearing conducted on 01.08.2025.
10	Baseline Monitoring Period	: October, 2024 to December, 2024.
11	Qualified Person	: Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast semi-Mechanized Method	
2	Quarry Area	:	1.844 ha	Life of Mine – 9.72 or 10 Years
3	Waste Generation	:	43834.40 Cum	
4	Stripping Ratio	:	01:0.1	
5	Working Days	:	300	
6	Bench: size & No	:	6m * 6m	
7	Elevation of Mine	:	118 AMSL to 120 AMSL	
8	Ground Level Elevation	:	118 AMSL	
9	Ultimate Working Depth	:	up to 80 AMSL (38 mbgl)	
10	Water Table	:	65-62 AMSL (53-56 mbgl)	
11	Topography of Mine	:	The area represents a small hillock.	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production of Stone in cum	Production of Stone in tons	Overburden in cum	Intercalated Waste in (cum)	Total Waste in (cum)	Bench AMSL
1st	46306.80	125028.36	15768.00	2437.20	18205.20	116-110
2nd	46580.40	125767.08	2952.00	2451.60	5403.60	110-104

3rd	46785.60	126321.12	0.00	2462.40	2462.40	104-98
4th	47332.80	127798.56	5040.00	2491.20	7531.20	116-92
5th	48488.00	130917.60	7680.00	2552.00	10232.00	110-98
Total	235493.60	635832.72	31440.00	12394.40	43834.40	

Land Use

Type of Land	Present Land Use (In Ha)	At the End of the Plan Period (In Ha)	At the End of Mine (In Ha.)
Excavation	--	1.307	1.844 (0.106 ha area shall be Backfilled, 1.16 ha converted in to water reservoir & 0.578ha shall be left as dead bench)
Waste Dump	--	0.465	Nil (waste dump to be removed and backfilled)
Road	--	0.025	--
Safety Zone	--	0.701 (Plantation)	0.701 (Plantation)
Total	0.0	2.498	2.545
Balance	2.545	0.047	0.00
Lease Hold Area	2.545	2.545	2.545

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.701 ha	1755
2	Along Approach Road	:	630 m	1260
3	Plantation in Backfilled area	:	0.106	265
4	Plantation in Dead bench	:	0.578	1445
5	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note – 10 % of Total plant i.e.483 plants will be planted as EK Ped Maa K Naam

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary)

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and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Summary of Baseline Data:

Monitoring season - October 2024 to December 2024

Parameter	No. of Locations	Environmental Baseline Study
Ambient Air Quality Monitoring	8 locations	PM2.5- 19.21 $\mu\text{g}/\text{m}^3$ to 49.38 $\mu\text{g}/\text{m}^3$ PM10- 48.59 $\mu\text{g}/\text{m}^3$ to 87.30 $\mu\text{g}/\text{m}^3$ SO ₂ - 6.82 $\mu\text{g}/\text{m}^3$ to 13.45 $\mu\text{g}/\text{m}^3$ NO ₂ - 9.89 $\mu\text{g}/\text{m}^3$ to 18.63 $\mu\text{g}/\text{m}^3$
Noise level monitoring	8 locations	During daytime- 51.6 to 58.4 dB (A) During Night time- 40.2 to 44.1 dB (A) Results were found within permissible limits
Water samples	Surface water – 2 locations	All parameters like Dissolved Oxygen (7.1 to 7.1 mg/l), pH (7.54- 7.78), Chloride (51.2- 54.2 mg/l), COD (20.0-26.0 mg/l), BOD (5.0-7.6 mg/l), Alkalinity as CaCO ₃ (156-172 mg/l), Total Hardness (178.0-198.0 mg/l) etc. are found within permissible limits
	Ground water- 5 locations	All parameters like TDS (590-778 mg/l), pH (7.16 to 7.82), Hardness (182-219 mg/l), Alkalinity as CaCO ₃ (156.4-235.0 mg/l), etc. are found within permissible limits & fit for consumption.
Soil Samples	5 locations	pH –7.25 - 7.84 Conductivity –402.0 to 451.0 $\mu\text{mhos}/\text{cm}$ Phosphorous –10.67 – 12.83 mg/kg Magnesium – 114.10 – 273.68 mg/kg Potassium – 77.40 – 98.50 mg/kg
EB	--	No endangered species found in study area.

Issues wise Public Hearing Action Plan -

S. No.	Issue	Reply	Action Plan
1.	Plantation	Representative of project proponent replied that plantation will be done on approach road as well in safety zone of the Lease area.	About 4823 Plants are proposed to be planted Rs 24,11,500 as the Capital Cost and every year Rs. 2.00 lakh every year will be spent as recurring cost.
2.	Fencing	Representative of project proponent replied that fencing of mine will be done to control pollution	Budget of Rs 2.50 Lac will be proposed for wire fencing. It will be done during 1 st year of mining.
3	Blasting	Controlled blasting will be done. Blasting will be done between 1 PM to 2 PM only.	-
4	Deep boring hand pump	Deep boring with hand pump will be provided to the villagers	Arrangement of 02 Hand Pump for water facility will be done for which total Rs. 2.50 lakh will be spent as capital cost and Rs 0.50 lakh will be spent as recurring cost which has also been included in EMP Cost. It will be provided during 1 st year of mining.
5	Health camps	facility of primary health care will be provided	The regular health check up camps will be organized for which Rs 1.00 lakh recurring cost has been proposed in the EMP Budget. It will be provided during 1 st year of mining.
6	Ambulance	The project proponent said that keeping in mind the health safety of the villagers, coordination will be established with the concerned department for the ambulance facility, along with this a vehicle will be arranged	Budget for ambulance/ vehicle facilities Rs 2.50 lakh capital cost will be spent. It will be provided during 1 st year of mining.
7	Surf detergent, soap, books, pens and	The project proponent that the desired daily use items will be distributed to the poor families in village every month under CSR	Budget of Rs 0.50 Lakh as recurring cost will be provided as the financial support which has been included in the EMP. It will be

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	copies	policy.	provided during 1 st year of mining.
8	Distribution of clothes	The project proponent assured that under CSR policy, cloth distribution will be done during festival.	Budget of Rs 0.50 Lakh as recurring cost will be provided as the financial support which has been included in the EMP. It will be provided during 1 st year of mining.
9	Employment	He said that local people should be given employment so that their migration can be stopped.	About 19 persons will be hired as per their qualifications. Remuneration will be given as Government Norms
10	Toilets	Male & female community toilets will be constructed in village	Budget of Rs 1.0 Lakh as capital cost & 0.30Lakh as recurring cost will be provided which has been included in the EMP. It will be provided during 1 st year of mining.
11	Tution Teacher	Tuition teacher will be arranged for education in the village.	Budget of 1.20Lakh as recurring cost will be provided which has been included in the EMP. It will be provided during 1 st year of mining.
12	Sports kit	The project proponent assured that Sports kit will be provided.	Also Rs 1.00 Lakh has been proposed for the distribution of the sports kit under EMP Budget. It will be provided during 1 st year of mining.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	4,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	24,11,500	2,00,000
4	Construction and maintenance of haul road	3,15,000	1,50,000
	Suggestions as per Public Hearing		
5	Arrangement of 02 Hand Pump with deep boring for water facility	2,50,000	50,000

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6	Medical facilities for the villagers (such as medical health camps and distribution of medicines)	-	1,00,000
7	Budget for Providing Ambulance	2,50,000	-
8	Budget for Financial Support poor families in village Bastadih	-	1,00,000
9	Budget for daily essentials products for economically poor families in village	-	50,000
10	Budget for distribution of appropriate assistance and clothes on the occasion of marriages and festivals	-	50,000
11	Budget for wire fencing of mine to control pollution.	2,00,000	-
12	Budget for construction of Community toilets in village.	1,00,000	30,000
13	Budget for Tuition teachers arranged for education	-	1,20,000
14	Budget for providing Boot, Jersey and sports material & vehicle for playing football tournament.	1,00,000	20,000
15	Budget for providing computer for education in village school.	1,00,000	-
	Total	37,26,500	13,90,000

Note: *4823 plants * 500 Rs (for each plants including hedges and fences) = 24,11,500 Lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- ~1,50,000/- (Including Maintenance Material)

*** 5.0 lakh per kilometer (5,00,000 * 0.63 km haul road = 3,15,000/-)**

Need Based Socioeconomic Survey

S. No.	Community Priority	Status	Need of the Community	Yearly Budget, Rs. In lacks
1.	Medical & Health Facilities	Very Poor	Health Camp for routine check-up, and medicine distribution	1.00
2.	Social Issues	Un-employment	Employment will be provided based on capability and experience	
3.	Drinking Water	Average	Hand Pump and Bore wells required	1.00

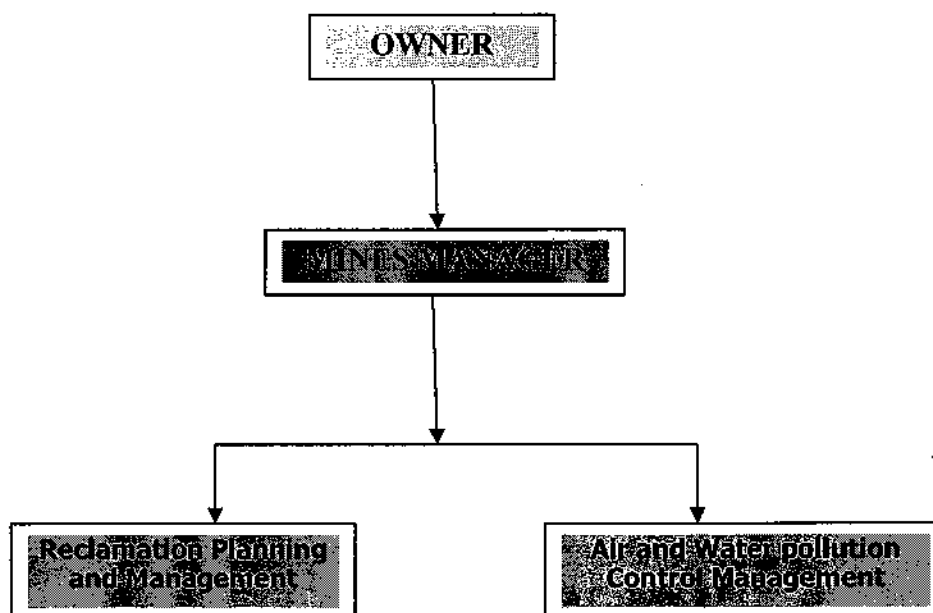
TOTAL	2.00

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 43834.40 cum (31440.00 cum of Overburden & 12394.40 cum of Intercalated waste) waste will be generated during the plan period. It has been calculated that total 43834.40 cum in-situ 54793.00 cum loose & 46574.05 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 21917.20 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 21917.20 cum waste shall be temporary dumped in eastern part of the area and it will cover 0.465ha. area.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after

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settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

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Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)

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- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

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The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bastadih Stone Deposit of M/s Mahadev Stone Works (Partners : Shri Santosh Kumar Bhagat & Shri Shivdhar Madaiya), Village : Bastadih, Anchal : Hiranpur, Distt. : Pakur, Jharkhand (2.545 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

4. Khaprajola Stone Deposit of M/s Gurukripa Stone Works (Partner : Shri Mohit Mandhyan),
Mouza : Khaprajola, Thana : Pakur, Distt. : Pakur, Jharkhand (2.79 Ha).

(Proposal No : SIA/JH/MIN/ 547036/2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 118th meeting held on 22 - 26.10.2024 and SEIAA, Jharkhand has approved the ToRs in 118th meeting held on 28th & 29th November, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3318/2024/436, dated 09.12.2024. The final EIA / EMP submitted by PP to SEAC on 02.09.2025.

EC Application for: Proposed Capacity- 85244.00 cum/annum or 255731.00 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Khaprajola Stone Deposit
2	Lessee:	: M/s Gurukripa Stone Works Partner – Sri Mohit Mandhyan 2) Sri Hiralal Mandhyan S/o Late Bhambha Mal, Address- 38/1C, S.N. Roy Road, Sahapur, Kolkata, West Bengal - 700038 3) Sri Chitesh Mandhyan S/o-Late Gopichand Mandhyan, Address- Sindhiparn, Distt Pakur, Jharkhand
3	Lease Address	: Mauja – Khaprajola, Thana-Pakur, District – Pakur, Jharkhand
4	Lease Area	: 2.79 Ha Acres- 6.8975 Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 120 Lakhs
7	EMP Budget	: Capital: Rs. 31.375 lakhs Recurring: Rs. 15.50 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 426260 cum Tonnes: 1278781 tones
10	Mine Life	: 5 years
11	Man power	: 31
12	Water Requirement	: 18.16 ~ 18.20 KLD (Drinking: 0.31 KLD, Dust Suppression: 8.8 KLD, Plantation:9.05 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Feeder Canal, approx. 9.33 km. in ENE direction of mine site.
17	Nearest Habitation	: Salboni approx. 0.53 km in SSE direction.

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18	Nearest Rail Station	:	Nagarnabi Railway station, approx. 2.50 km in East direction.
19	Nearest Air Port	:	Deoghar Airport, approx. 117.50 km towards West direction.
20	Nearest Forest	:	Protected Forest, approx. 4.00 Km in SW direction of mine site.
21	Road & Highways	:	NH-133A, Approx. 4.20 km in North direction.
22	Need Based SE Budget	:	2.0 Lakh/Annum

CO-ORDINATES

1	Latitude	From 24°35'52.282" N	To 24°36'36.0366"N
2	Longitude	From 87°50'44.766" E	To 87°50'52.320" E

LAND DETAILS

Khata No.	Plot No.
24	679 (P), 680 (P)& 681 (P)
10	682 & 683
20	691 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1659/M, dated 28.09.2024.
2	CO	:	The CO, Pakur vide letter no. 835/Ra., dated 31.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyon & Register II.
3	DMO Cluster	:	DMO, Pakur vide memo no. 1705/M, dated 09.10.2024 certified that 02 LOI (4.71 Acre & 2.86 Acre) and 01 other mining lease area (6.98 Acre) exists within 500 meters radius from proposed project site and total area is 21.4475 Acre or 8.68 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 816, dated 27.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Pakur Forest Division vide letter no. 683, dated 04.05.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1704/M, dated 09.10.2024 that this project is mentioned in approved DSR of

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			Pakur District as a potential area (Sl. no. 69, Page no. 149).
7	Gram Sabha	:	BDO, Pakur vide letter no. 1598, dated 16.07.2024 informed that Gram Sabha conducted on 12.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1777/M, dated 17.10.2024.
9	Public Hearing	:	Public Hearing conducted on 18.07.2025.
10	Baseline Monitoring Period	:	October, 2024 to December, 2024.
11	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized method	
2	Quarry Area	:	2.79 ha	Life of Mine – 5 Years
3	Waste Generation	:	26380 cum of Gritty Soil and 22432 cum of Intercalated Waste.	
4	Stripping Ratio	:	1: 0.19	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	46 AMSL to 55 AMSL	
8	Ground Level Elevation	:	46 AMSL	
9	Ultimate Working Depth	:	Up to 10 AMSL (36 m bgl)	
10	Water Table	:	Up to 06 AMSL (40 m bgl)	
11	Topography of Mine	:	The area represents a moderately sloping land with rock mass of Basalt.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Production of Stone		Removal of Gritty Soil		Intercalated Waste	Bench AMSL
	in cum	in tons	in cum	in tons	in cum	
1st	85240	255717	7030	10545	4487	53-28

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2nd	85224	255674	12150	18225	4486	53 – 22
3rd	85244	255731	5040	7560	4487	52 – 28
4th	85244	255731	2160	3240	4487	53 – 28
5th	85215	255645	0	0	4485	28 – 10
Total	426167	1278498	26380	39570	22432	

Land Use

Pattern of Utilization	Present Land Use (Ha)	At the end of Plan period (Ha)	Conceptual Period (In Ha)		
			Public Use	Water Body	Plantation
Quarry	Nil	2.17 ha. (0.39 Ha area shall be backfilled)	---	2.17	---
Greenbelt within Safety Barrier	Nil	0.62 (Plantation)	---	---	0.62
Road	0.02	Nil	---	---	---
Total Area in Use	0.02	2.79	---	2.17	0.62
Balanced Area unused	2.77	Nil	---	---	---
Total Applied Area	2.79	2.79	2.79		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.62 ha	1550
2	Along Approach Road	:	950 m	1900
4	No. of plants distributed with consultation local authorities /village Panchayat	:	--	1075
5	Total	:	4525	

Note – 10 % of Total plant i.e. 453 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be


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undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Summary of Baseline Data:

Monitoring season - October 2024 to December 2024

Parameter	No. of Locations	Environmental Baseline Study
Ambient Air Quality Monitoring	8 locations	PM2.5- 27.23 $\mu\text{g}/\text{m}^3$ to 50.96 $\mu\text{g}/\text{m}^3$ PM10- 64.08 $\mu\text{g}/\text{m}^3$ to 86.32 $\mu\text{g}/\text{m}^3$ SO ₂ - 5.90 $\mu\text{g}/\text{m}^3$ to 18.18 $\mu\text{g}/\text{m}^3$ NO ₂ - 6.98 $\mu\text{g}/\text{m}^3$ to 26.00 $\mu\text{g}/\text{m}^3$
Noise level monitoring	8 locations	During daytime- 52.1 to 57.8 dB(A) During Night time- 37.4 to 42.5 dB(A) Results were found within permissible limits
Water samples	Surface water – 2 locations	All parameters like Dissolved Oxygen (6.2 to 6.5 mg/l), pH (7.52-7.87), Chloride (36.0-48.8 mg/l), COD (21.0-32.0 mg/l), BOD (4.5-6.1 mg/l), Alkalinity as CaCO ₃ (145-175 mg/l), Total Hardness (150-164 mg/l) etc. are found within permissible limits
	Ground water- 5 locations	All parameters like TDS (490-636 mg/l), pH (7.27-7.89), Hardness (198-240 mg/l), Alkalinity as CaCO ₃ (180-235 mg/l), etc. are found within permissible limits & fit for consumption.
Soil Samples	5 locations	pH –6.97 – 7.58 Conductivity –327.0 – 428.0 $\mu\text{mhos}/\text{cm}$ Phosphorous –10.02 - 18.67 mg/kg Magnesium – 149.97 – 258.0 mg/kg Potassium – 248.0 – 290.10 mg/kg
EB	--	No endangered species found in the study area

Issues wise Public Hearing Action Plan

S. No.	Issue	Reply	Action Plan
1.	Computer	The project proponent said that computer will be provided in the school for the children from the budget of CSR activities.	Rs 0.50 lakh will be spent as capital cost & Rs. 0.10 lakhs as recurring cost to provide computer at school. It will be provided during 1 st year of mining.

2.	Stationary	The project proponent said that stationery will be provided for the children from the budget of CSR activities.	Rs. 0.50 lakh will be spent as recurring cost for provision of stationery for education of children, which is also included in the EMP cost. It will be provided during 1 st year of mining
3	Blasting	The project proponent stated that controlled blasting would be carried out by a licensed blaster.	-
4	Plantation	About 4525 Plants are proposed to be planted so as to mitigate pollution.	For green belt development Rs 22,62,500 as the Capital Cost and every year Rs. 2.00 lakh every year will be spent as recurring cost. It will be provided during 1 st year of mining
5	Employment	He said that local people should be given employment so that their migration can be stopped.	About 31 persons will be hired as per their qualifications. Remuneration will be given as Government Norms
6	Water sprinkling	regular sprinkling of water will be done for the prevention and control of Air pollution.	Total Rs. 1.50 lakh will be spent as recurring cost for Pollution Control & Dust Suppression.
7	Boring repairing	The project proponent said that repair work of boring/hand pump will be done.	Budget for boring/hand pump repairing of Rs 1.00 lakh will be spent as recurring cost. It will be provided during 1 st year of mining
8.	Ambulance	The project proponent said that keeping in mind the health safety of the villagers, coordination will be established with the concerned department for the ambulance facility, along with this a vehicle will be arranged and first aid facility will also be provided.	Budget for ambulance/ vehicle facilities Rs 2.50 lakh will be spent as recurring cost. This budget has been included in the EMP. It will be provided during 1 st year of mining
9.	Football Tournament	support will be provided in the annual tournament organized in the village	Rs 0.50 lakh recurring cost will be spent to support for annual football tournament. It will be provided during 1 st year of mining
10.	Handpump	project proponent informed that a hand pump with deep boring would be installed in the village	Total Rs. 1.0 lakh will be spent as capital cost and Rs 0.20 lakh will be spent as recurring cost. It will be provided during 1 st year of mining

11.	Tents in wedding	for temporary tents or sheds for marriage ceremonies would be made through the Gram Sabha under the CSR budget.	Rs. 1.0 lakh recurring cost will be spent for the arrangement of tents or sheds in the wedding. It will be provided during 1 st year of mining

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring	--	50,000
	i) Air		40,000
	ii) Water		20,000
	iii) Soil		10,000
	iv) Noise		
3	Plantation	22,62,500	2,00,000
4	Construction and maintenance of haul road	4,75,000	1,50,000

Suggestions As per Public Hearing

5	Budget for stationery and Education	-	50,000
6	Budget for computer at school	50,000	10,000
7	Budget for ambulance facilities	-	2,50,000
8	Budget for boring/hand pump repairing	-	1,00,000
9	Budget for support football tournaments.	-	50,000
10	Budget for Installation of hand pump with deep boring in village playground	1,00,000	20,000
11	Budget for distribution of the sports kit	-	1,50,000
12	Budget for Arrangement of tents in the wedding.	-	1,00,000
13	Budget for illness, marriage & festivals	-	1,00,000
14	Arrangement of 02 Hand Pump with deep boring for water facility	2,50,000	50,000
	Total	31,37,500	15,50,000

Note: *4525 plants * 500 Rs (for each plants including hedges and fences) = 22.625 Lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- or 1,50,000/- (including maintenance)

*** 5.0 lakh per kilometer (500000 * 0.95 km haul road = 4,75,000 /)**

Need Based Socioeconomic Survey

S. No.	Community Priority	Status	Need of the Community	Yearly Budget, Rs. In lacks
1.	Employment	Un-employment	Unemployment is the major issue in the region, Employment will be	Renumeration as per Government Rules and

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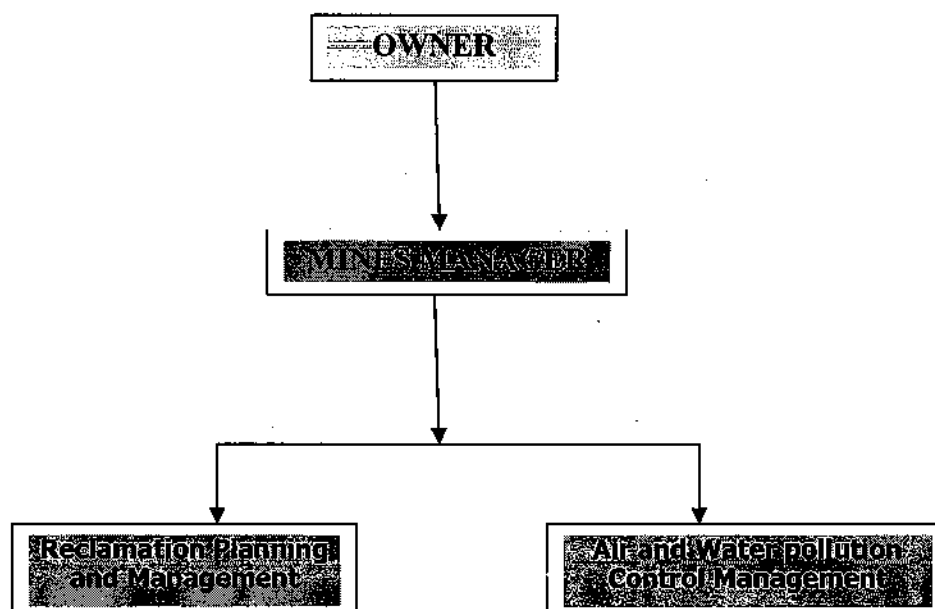
			provided based on capability and experience	Regulation
2.	Agriculture Facilities	Poor	Irrigation and other facilities will be provided	1.00
3.	Medical & Health Facilities	Poor	Health Camp for routine check-up, and medicine distribution	1.00
TOTAL				2.00

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 26380 cum of Gritty Soil and 22432 cum intercalated waste shall be generated during the plan period. The area is covered with a layer of gritty soil. During quarry development in 1st & 2nd year gritty soil and intercalated waste will be removed and this gritty soil & waste will be temporarily dumped [area -0.28 Ha, (L x W x H = 64m x 51m x 4m) & 2nd year area 0.21(L x W x H = 57m x 43m x 4m & 4m) at the south part of the area with suitable precautions like parapet wall, garland drain & in 3rd year gritty soil, intercalated waste & existing temporarily dumped materials will be Backfill within the quarry & 4th and 5th year removal material backfill within the exhausted quarry.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within

		last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale

1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in

loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

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- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers

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- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

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- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Khaprajola Stone Deposit of M/s Gurukripa Stone Works (Partner : Shri Mohit Mandhyan), Mouza : Khaprajola, Thana : Pakur, Distt. : Pakur, Jharkhand (2.79 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests .

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Summary findings of same to submitted along with 6 monthly compliance.

- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

5. Tongi Stone Deposit of M/s Tungi Stone Works (Prop. : Md. Motiur Rahman), Village : Tongi, Anchal : Hiranpur, Distt. : Pakur, Jharkhand (2.027 Ha).

(Proposal No : SIA/JH/MIN/ 546892/2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 118th meeting held on 22 - 26.10.2024 and SEIAA, Jharkhand has approved the ToRs in 118th meeting held on 28th & 29th November, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3307/2024/401, dated 06.12.2024. The final EIA / EMP submitted by PP to SEAC on 02.09.2025.

EC Application for: Proposed Capacity- 38900 cum/annum or 105029 TPA.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Tongi Stone Deposit
2	Lessee:	: M/S Tungi Stone Works, (Proprietor – Md. Motiur Rahman, S/O- Ekramul Haq)
3	Lease Address	: Village – Tongi, Anchal – Hiranpur, District – Pakur, Jharkhand
4	Lease Area	: 2.027 Ha Acres- 5.01Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 80Lakhs

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7	EMP Budget	:	Capital: Rs. 21.63 lakhs	Recurring: Rs.9.20Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.:385312.22cum	Tonnes:1040343 tones
10	Mine Life	:	9.9 or 10 years	
11	Man power	:	18	
12	Water Requirement	:	9.58~9.60KLD (Drinking: 0.18 KLD,Dust Suppression: 3.0KLD, Plantation:6.4KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Torai Nadi, Approx. 3.85 km. in SW direction of mine site.	
17	Nearest Habitation	:	Approx. 0.41km	
18	Nearest Rail Station	:	Kotalapukur Railway station, approx. 8.92 km towards ENE direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 109.28 km towards WSW direction	
20	Nearest Forest	:	Protected Forest, Approx. 1.80 km. in NE direction of mine site. Protected Forest, Approx. 1.20 km. in SW direction of mine site. Protected Forest, Approx. 1.60 km. in SE direction of mine site.	
21	Road & Highways	:	NH- 133A - Approx. 1.88 km in SW direction.	
22	Need Based SE Budget	:	2 Lac/Annum	

CO-ORDINATES

1	Latitude	From 24°42'35.2990"	To 24°42'43.4017"N
2	Longitude	From 87°44'25.7053"	To 87°44'30.9486"E

LAND DETAILS

Khata No.	Plot No.
04	131
07	132
09	134(P), 138(P)
10	133(P)
12	136
13	135,137(P),139
16	129(P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1740/M, dated 15.10.2024.

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2	CO	:	The CO, Hiranpur vide letter no. 47/Ra., dated 31.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II and also mentioned that the habitation of 05 houses at a distance of 410 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO Cluster	:	DMO, Pakur vide memo no. 1797/M, dated 18.10.2024 certified that 03 other mining lease area (10.36 Acre, 11.77 Acre & 5.83 Acre) exists within 500 meters radius from proposed project site and total area is 32.97 Acre or 13.34 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 368, dated 22.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Pakur Forest Division vide letter no. 160, dated 30.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1798/M, dated 18.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 36, Page no. 118).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 247/Vi., dated 29.02.2024 informed that Gram Sabha conducted on 28.02.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1818/M, dated 19.10.2024.
9	Public Hearing	:	Public Hearing conducted on 30.07.2025.
10	Baseline Monitoring Period	:	October, 2024 to December, 2024.
11	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi Mechanized Method
2	Quarry Area	:	1.547ha Life of Mine – 9.9 or 10Years
3	Waste Generation	:	27024 cum
4	Stripping Ratio	:	1: 0.13
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m

7	Elevation of Mine	:	64 AMSL to 72 AMSL
8	Ground Level Elevation	:	64 AMSL
9	Ultimate Working Depth	:	Up to 34AMSL (30 mgbl)
10	Water Table	:	20-17 AMSL (47-44 mbgl)
11	Topography of Mine	:	The area represents a small hillock.
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	140 litre/day

Production Details

Year	Production of Stone in cum	Production of Stone in tons	Overburden in cum	Intercalated Waste in (cum)	Total Waste in (cum)	Bench AMSL
1st	38368	103593	6775	2019	8794	64-58
2nd	38891	105006	5825	2047	7872	58-52
3rd	38900	105029	4223	2047	6270	58-52
4th	38846	104883	0	2045	2045	52-46
5th	38817	104806	0	2043	2043	46-40
Total	193821	523316	16823	10201	27024	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan Period (Ha)	After life of mine (Ha)
Excavation	--	0.967	1.547 (0.155 ha area shall be Backfilled, 0.857 ha converted in to water reservoir & 0.535ha shall be left as dead bench)
Waste Dump	--	0.240	Nil (waste dump to be removed and backfilled)
Road	--	0.050	--
Infrastructure (Crusher)	--	--	--

Safety Zone	--	0.480 (Plantation)	0.480 (Plantation)
Total	0.0	1.737	2.027
Unused Area	2.027	0.290	0.00
Total Lease Area	2.027		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.480 ha	1200
2	Along Approach Road	:	100 m	200
3	Plantation in Backfilled area	:	0.155	388
4	Plantation in Dead bench	:	0.535	1338
5	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
6	Total	:	3226	

Note – 10 % of Total plant i.e.323 plants will be planted as EK Ped Maa K Naam

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Summary of Baseline Data:

Monitoring season - October 2024 to December 2024

Parameter	No. of Locations	Environmental Baseline Study
Ambient Air Quality Monitoring	8 locations	PM2.5- 22.69 $\mu\text{g}/\text{m}^3$ to 46.25 $\mu\text{g}/\text{m}^3$ PM10- 51.17 $\mu\text{g}/\text{m}^3$ to 88.32 $\mu\text{g}/\text{m}^3$ SO2- 5.50 $\mu\text{g}/\text{m}^3$ to 10.28 $\mu\text{g}/\text{m}^3$ NO2- 10.28 $\mu\text{g}/\text{m}^3$ to 20.23 $\mu\text{g}/\text{m}^3$

Noise level monitoring	8 locations	During daytime- 50.4 to 58.5 dB(A) During Night time- 37.4 to 42.6 dB(A) Results were found within permissible limits
Water samples	Surface water – 2 locations	All parameters like Dissolved Oxygen (5.6 to 6.8 mg/l), pH (6.96-7.32), Chloride (36.0-46.58 mg/l), COD (16.0-26.0 mg/l), BOD (2.2-5.2 mg/l), Alkalinity as CaCO ₃ (140-145 mg/l), Total Hardness (124-150 mg/l) etc. are found within permissible limits
	Ground water- 5 locations	All parameters like TDS (680.0-810.0 mg/l), pH (7.16 to 7.98), Hardness (216-258 mg/l), Alkalinity as CaCO ₃ (214.0-260.0 mg/l), etc. are found within permissible limits & fit for consumption.
Soil Samples	5 locations	pH –7.37 - 7.60 Conductivity –391.0 to 482.0 µmhos/cm Phosphorous –10.10 – 12.40 mg/kg Magnesium – 92.04 – 265.80 mg/kg Potassium – 73.20 – 94.22 mg/kg
EB	--	No endangered species found in the study area.

Issues wise Public Hearing Action Plan

S. No.	Issue	Reply	Action Plan
1.	Employment	He said that local people should be given employment so that their migration can be stopped.	About 18 persons will be hired as per their qualifications. Remuneration will be given as Government Norms.
2.	Drinking water	Deep boring with hand pump will be provided at places identified by the villagers.	Arrangement of 02 Hand Pump for water facility will be done for which total Rs. 2.50 lakh will be spent as capital cost and Rs 0.50 lakh will be spent as recurring cost which has also been included in EMP Cost. It will be provided during 1 st year of mining
3.	Road	Filling work will be done with stone dust and soil gravel for constructing the road in the village	Total Rs. 2.0 lakh capital cost & 1.5 lakhs recurring cost will be spent for Construction and maintenance of road. It will be done during 1 st year of mining
4.	Hospital facility	First aid facility will be arranged in the mining unit	Medical camps along with Medicine distribution will be organized in every six month which Rs 1.00 lakh recurring cost has been proposed in the EMP

			Budget. It will be provided during 1 st year of mining
5.	Girls Marriage	The project proponent assured that financial assistance will be provided for the girl's marriage.	Rs. 1.0 lakh recurring cost will be spent in marriage/ festivals which are also included in the EMP cost. It will be provided as and when needed.
6.	Staircase construction	It was assured by the project proponent that staircase will be constructed.	For construction of staircase 1.50 Lakh capital cost and 0.30lakh recurring cost has been proposed in EMP. It will be provided during 1 st year of mining

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	4,00,000
2	Baseline Monitoring		
	i) Air		50,000
	ii) Water	--	40,000
	iii) Soil		20,000
	iv) Noise		10,000
3	Plantation	16,13,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
Suggestions As per Public Hearing			
5	Budget for Arrangement of 02 Hand Pump with deep boring for water facility	2,50,000	50,000
6	Budget for Medical camps & Medicine distribution	--	1,00,000
7	Budget for marriage/ festivals	1,00,000	--
TOTAL		21,63,000	9,20,000

Note: *3226 plants * 500 Rs (for each plants including hedges and fences) = Rs. 16.13 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- or 150000/- (including maintenance)

Need Based Socioeconomic Survey:

S. No.	Community Priority	Status	Need of the Community	Yearly Budget, Rs. In lacks
1.	Agriculture Facilities	Poor	Irrigation and other facilities will be provided	1.00

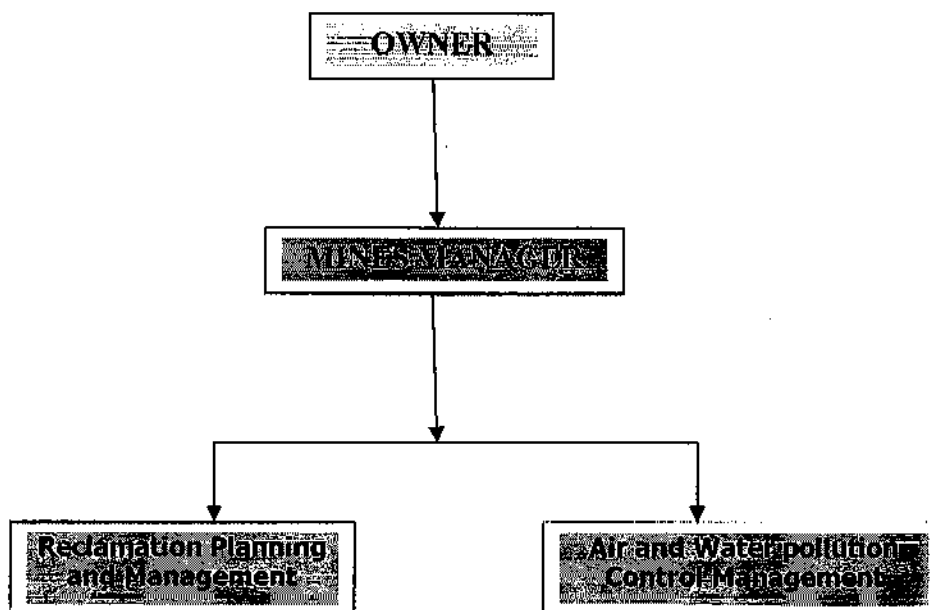
2.	Employment	Un-employment	Unemployment is the major issue in the region, Employment will be provided based on capability and experience	Renumeration as per Government Rules and Regulation
3.	Medical & Health Facilities	Poor	Health Camp for routine check-up, and medicine distribution	1.00
TOTAL				2.00

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 27024 cum in-situ 33780.13 cum loose & 28713.11 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 14357 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 14357 cum waste shall be temporary dumped in southern part of the area and it will cover 0.240ha area



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within

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		last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale

1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in

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loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

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- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

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Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers

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- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Tongi Stone Deposit of M/s Tungi Stone Works (Prop. : Md. Motiur Rahman), Village : Tongi, Anchal : Hiranpur, Distt. : Pakur, Jharkhand (2.027 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged

photographs.

- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

6. Chandradipa Stone Deposit of Partners (i) Shri Ranjit Kumar Singh (ii) Mr. Ibrahim Ansari (iii) Mr. Aashiq Ansari (iv) Smt. Gulshan Bibi (v) Mr. Roshan Ali, Village : Chandradipa, Thana : Mihijam, Distt. : Jamtara, Jharkhand (2.169 Ha).

(Proposal no.: SIA/JH/MIN/ 546659 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 119th meeting held on 17 - 22.12.2024 and SEIAA, Jharkhand has approved the ToRs in 118th meeting held on 30th & 31st December, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3437/2024/510, dated 13.01.2025. The final EIA / EMP submitted by PP to SEAC on 02.09.2025.

EC Application for: Proposed Capacity- 33394.40 cum/annum or 90164.88 TPA

Project and Location Details :

Sl	Parameter		Details
1	Project Name	:	Chandradipa Stone Deposit
2	Lessee:	:	Partners- 1) Sri Ranjit Kumar Singh, 2) Sri Ibrahim Ansari, 3) Sri Aashiq Ansari, 4) Smt. Gulshan Bibi, 5) Sri Roshan Ali
3	Lease Address	:	Village – Chandradipa, Anchal – Jamtara, District – Jamtara,

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			Jharkhand	
4	Lease Area	:	2.169 Ha	Acres- 5.36 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 70 Lakhs	
7	EMP Budget	:	Capital: Rs. 23.965 lakhs	Recurring: Rs. 6.70 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 314381.6 cum	Tonnes: 848830.32 tons
10	Mine Life	:	9.7 or 10 years	
11	Man power	:	18	
12	Water Requirement	:	12.28~12.30 KLD (Drinking: 0.18 KLD, Dust Suppression: 5.40 KLD, Plantation:6.70 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Barakar River, Approx. 8.60 km. in WSW direction of mine site.	
17	Nearest Habitation	:	Approx. 0.71 km	
18	Nearest Rail Station	:	Bodhma Railway station, approx. 2.0 km in East direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 61.90 km towards NNW direction	
20	Nearest Forest	:	Dense mix jungle, Approx. 3.50 km in SW direction of mine site Dense mix jungle, Approx. 3.80 km in SSW direction of mine site.	
21	Road & Highways	:	NH-419, Approx. 1.50 km in East direction.	
22	Need Based SE Budget	:	2 Lac/Annum	

CO-ORDINATES

1	Latitude	From N 23°53'53.768"	To N 23°54' 3.148"
2	Longitude	From E86°49'42.995"	To E 86°49' 48.998"

LAND DETAILS

Khata no.	Plot no.
76	1193 & 1163 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Jamtara vide letter no. 203/M, dated 28.02.2024.
2	CO	:	The CO, Jamtara vide letter no. 46/Ra., dated 11.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle-

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			Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	:	DMO, Jamtara vide memo no. 224, dated 05.03.2024 certified that 01 other mining lease area (2.30 Acre) and Lol 7.19 Acre exists within 500 meters radius from proposed project site and total area is 14.85 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 238, dated 10.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Jamtara Forest Division vide letter no. 158, dated 02.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Jamtara District (Sl. no. 05, Page no. 114A).
7	Gram Sabha	:	BDO, Jamtara vide letter no. 1321/Vi., dated 31.12.2023 informed that Gram Sabha conducted on 22.11.2023.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 56/DDM, dated 25.04.2024.
9	Public Hearing	:	Public Hearing conducted on 16.07.2025.
10	Baseline Monitoring Period	:	October, 2024 to December, 2024.
11	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi Mechanized Method
2	Quarry Area	:	2.169 ha Life of Mine – 9.7 or 10 Years
3	Waste Generation	:	27024 cum
4	Stripping Ratio	:	1: 0.13
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m
7	Elevation of Mine	:	221 AMSL to 203 AMSL
8	Ground Level Elevation	:	203 AMSL
9	Ultimate Working Depth	:	Up to 193 AMSL (10 mgb)

10	Water Table	:	182 AMSL (21 mbgl)
11	Topography of Mine	:	The area represents a small hillock.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	140 litre/day

Production Details

Year	Production of Stone		Overburden in cum	Intercalated waste in cum	Total waste in cum	Bench AMSL
	cum	tons				
1 st year	29837.60	80561.52	8320.00	1570.40	9890.40	217-211
2 nd year	30628.00	82695.60	0.00	1612.00	1612.00	205
3 rd year	31616.00	85363.20	4576.00	1664.00	6240.00	205-199
4 th year	32604.00	88030.80	0.00	1716.00	1716.00	199
5 th year	33394.40	90164.88	0.00	1757.60	1757.60	199-193
Total	158080.00	426816.00	12896.00	8320.00	21216.00	

Land Use

Pattern of Utilization	Existing Land Use(Ha)	At The End of Plan Period(Ha)	At Conceptual Period (Ha)
Excavation	0.0	1.193	1.616 (0.396 ha area shall be backfilled, 1.22 ha converted in to water reservoir)
Waste Dump	0.0	0.348	Nil (waste dump to be removed and backfilled)
Road	0.0	0.015	0.0
Crusher	0.0	0.0	0.0
Safety Zone	0.0	0.553 (Plantation)	0.553 (Plantation)
TOTAL	0.00	2.109	2.169
Unused Area	2.169	0.060	0.0
Total Area	2.169		

ENVIRONMENT MANAGEMENT
Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.553 ha	1383
2	Along Approach Road	:	440 m	880
3	Plantation in Backfilled area	:	0.396m	990
4	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note – 10 % of Total plant i.e. 336 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Summary of Baseline Data:

Monitoring season - October 2024 to December 2024

Parameter	No. of Locations	Environmental Baseline Study
Ambient Air Quality Monitoring	8 locations	PM2.5- 22.69 $\mu\text{g}/\text{m}^3$ to 45.77 $\mu\text{g}/\text{m}^3$ PM10- 51.24 $\mu\text{g}/\text{m}^3$ to 90.92 $\mu\text{g}/\text{m}^3$ SO2- 5.80 $\mu\text{g}/\text{m}^3$ to 9.71 $\mu\text{g}/\text{m}^3$ NO2- 10.87 $\mu\text{g}/\text{m}^3$ to 20.86 $\mu\text{g}/\text{m}^3$
Noise level monitoring	8 locations	During daytime- 50.4 to 58.5 dB(A) During Night time- 37.4 to 43.1 dB(A) Results were found within permissible limits
Water samples	Surface water – 2 locations	All parameters like Dissolved Oxygen (5.6 to 6.8 mg/l), pH (7.32 – 7.41), Chloride (36.0 – 46.58 mg/l), COD (16.0 – 26.0 mg/l), BOD (2.2 – 5.2 mg/l), Alkalinity as CaCO_3 (140-145 mg/l), Total Hardness (124-150 mg/l) etc. are found within permissible limits

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	Ground water- 5 locations	All parameters like TDS (524-832 mg/l), pH (7.36 to 7.82), Hardness (196-240 mg/l), Alkalinity as CaCO ₃ (198-248 mg/l), etc. are found within permissible limits & fit for consumption.
Soil Samples	5 locations	pH -7.37 - 7.60 Conductivity -391.0 to 482.0 µmhos/cm Phosphorous -10.10 - 12.40 mg/kg Magnesium - 92.04 - 265.80 mg/kg Potassium - 73.20 - 94.22 mg/kg
EB	-	No endangered species found in the study area

Issues wise Public Hearing Action Plan

S. No.	Issue	Reply	Action Plan
1.	Employment	Employment will be provided to the villagers as per their need and qualification.	About 18 persons will be hired as per their qualifications. Remuneration will be given as Government Norms.
2.	Road Repair	Repairing and maintenance of village road will be done on regular basis	For the Road repairing & strengthening Rs. 2.20 lakh will be invested as the Capital Cost and every year Rs. 1.50 lakh every year will be spent as recurring cost. It will be done during 1 st year of mining
3	Water Problem	Representative of project proponent replied Hand Pump will be installed so as to provide adequate water supply to the villagers.	Installation of 02 Hand Pump for water facility will be done for which total Rs. 2.50 lakh will be spent as capital cost and Rs 0.50 lakh will be spent as recurring cost which has also been included in EMP Cost. It will be provided during 1 st year of mining
4	Plantation &	About 3353 Plants are proposed to be planted so as to mitigate pollution.	For green belt development Rs 16,76,500 as the Capital Cost and every year Rs. 1.00 lakh every year will be spent as recurring cost.
5	Fencing	The fencing will be done around the mine lease	Budget of Rs 2.50 Lac will be proposed for fencing. It will be done during 1 st year of

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COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring	--	50,000
	i) Air		40,000
	ii) Water		20,000
	iii) Soil		10,000
	iv) Noise		
3	Plantation	16,76,500	1,00,000
4	Construction and maintenance of haul road	2,20,000	1,50,000
5	Arrangement of 02 Hand Pump for water facility (As per Public Hearing Issues)	2,50,000	50,000
6	For Wire Fencing around mine boundary (As per Public Hearing Issues)	2,50,000	50,000
TOTAL		23,96,500	6,70,000

Note: * 3353 plants * 500 Rs (for each plants including hedges and fences) = 16.765 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300*300 = 90,000/- or 1, 50,000 /- (including maintenance)

* 5.0 lakh per kilometer (500000 * 0.440 km haul road = Rs. 2, 20,000 /-)

Need Based Socioeconomic Survey

S. No.	Community Priority	Status	Need of the Community	Yearly Budget, Rs. In lacks
1..	Employment	Un-employment	Unemployment is the major issue in the region, Employment will be provided based on capability and experience	Renumeration as per Government Rules and Regulation
2	Drinking Water	Average	Hand Pump and Bore wells required	1.00

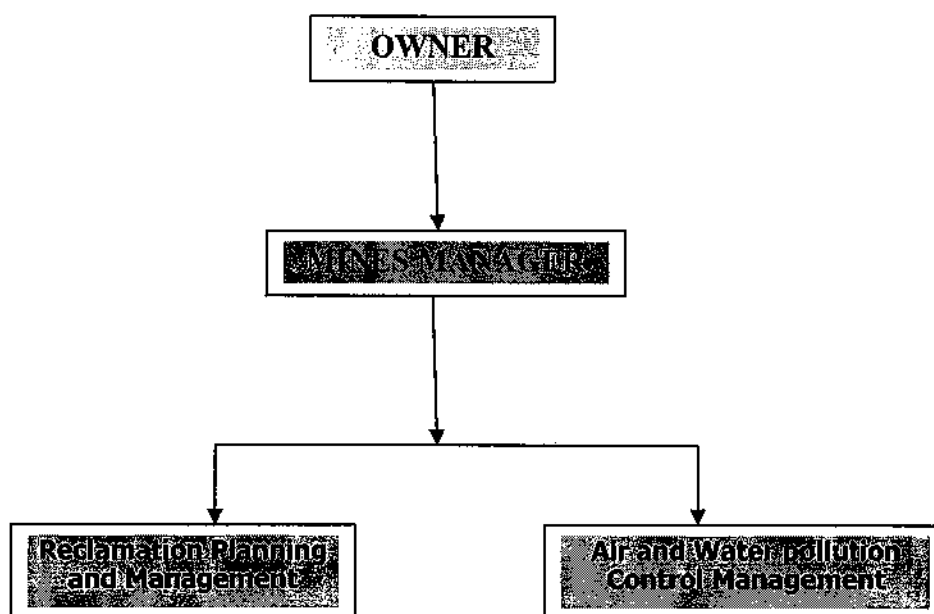
3.	Medical & Health Facilities	Poor	Health Camp for routine check-up, and medicine distribution	1.00
TOTAL				2.00

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 21216.00 cum of total waste will be generated during the plan period. The 50 % of waste generated during the plan period i.e. 10608.00 cum (insitu) shall be utilized for approach & haul road maintenance. The rest waste material 50 % i.e. 10608.00 cum insitu 13260.0 cum loose & 11271.00 cum compact waste shall be temporary dumped in southern part of the applied area with maximum height of 4.91m and it will cover 0.348 ha area.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within

		last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12

3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

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- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

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- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chandradipa Stone Deposit of Partners (i) Shri Ranjit Kumar Singh (ii) Mr. Ibrahim Ansari (iii) Mr. Aashiq Ansari (iv) Smt. Gulshan Bibi (v) Mr. Roshan Ali, Village : Chandradipa, Thana : Mihijam, Distt. : Jamtara, Jharkhand (2.169 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged

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- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

7. Chahal Stone Deposit of M/s Ganpati Minerals (Prop. : Smt. Sweta Devi), Mouza : Chahal, Thana : Deori, Distt. : Giridih, Jharkhand (4.86 Ha).

(Proposal no.: SIA/JH/MIN/ 541442 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Giridih).

The project has been granted EC by DEIAA, Giridih vide letter no. 92/EC/DEIAA/Giridih, dated 11.05.2017 for the capacity 180370 cum/annum or 486999 TPA of Stone (Quartzite).

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Giridih which has been taken up for consideration on 12.09.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ -96 µg/m³ PM_{2.5} -567 µg/m³ SO₂ -18.2 NO₂ - 19.0 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 458/M, dated 05.05.2025 by DMO, Giridih is within the permissible limit of EC.

The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 2373, dated 19.08.2025.



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A certification of the compliance of the conditions of previous EC issued by JSPCB has been submitted to SEAC. The Committee desired to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 180370 cum /annum or 486999 TPA of Stone (Quartzite)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Chahal Stone Deposit
2	Lessee:	: M/s Ganpati Minerals Proprietor: Smt. Sweta Devi W/o Sri Rajkumar Ojha Address - At- Ishri Bazaar, P.S.- Nimiaghat, District- Giridih, Jharkhand.
3	Lease Address	: Mouza- Chahal, Thana - Deori, District - Giridih , State - Jharkhand
4	Lease Area	: 4.86ha Acres- 12.00Acres
5	Type of Land	: Non-Forest (Govt. waste land)
6	Project Cost	: Rs. 1.30 cr.
7	EMP Budget	: Capital: Rs 8.75Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	: New (Re-appraisal of DEIAA EC)
9	Mineable Reserves	: 3599818 tons 1333265.92cum
10	Mine Life	: Up to the lease period i.e. 24.10.2017 to 23.10.2027.
11	Man power	: 27
12	Water Requirement	: 9.77 ~ 10.00 KLD (Drinking: 0.27 KLD, Dust Suppression: 7.1 KLD, Plantation: 2.40 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Garhi Nadi, Approx. 4.80 km towards NW direction of mine site.
17	Nearest Habitation	: Chahal, Approx. 0.57km in South direction.
18	Nearest Railway Station	: Jamua Railway station, approx. 20.89 km towards SSW direction.
19	Nearest Air Port	: Deoghar Airport, approx. 45.82km towards East direction.
20	Nearest Forest	: Protected Forest, Approx. 4.00 km towards South direction of mine site. Protected Forest, Approx. 3.7 km towards SSW direction of mine site. Protected Forest, Approx. 4.45 km towards SE direction of mine site.
21	Road & Highways	: NH- 333C, Approx. 4.48 km in ESE direction

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22	Approach Road	:	550 meter

CO-ORDINATES

1	Latitude	:	From 24°31'7.34 " N	To 24°31'14.63" N
2	Longitude	:	From 86°15'34.21" E	To 86°15'48.24" E

LAND DETAILS

Khata no.	Plot no.
18	157 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 24.10.2017 to 23.10.2027.
2	CO	:	The CO, Deori vide letter no. 543, dated 12.08.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan.
3	DMO Cluster	:	DMO, Giridih vide memo no. 457/M, dated 05.05.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 141, dated 25.01.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Giridih East Forest Division vide letter no. 1752, dated 26.08.2016 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	The DMO, Giridih vide letter no. 614/M, dated 18.06.2025 stating that inadvertently this lease was not included in the approved DSR of Giridih District. He has further requested that this project may be considered as being part of the DSR. The Committee accepted the request of the DMO, Giridih.
7	Gram Sabha	:	Gram Sabha conducted on 05.10.2016
8	Scheme / Mine Plan Approval	:	Mining scheme approved by Additional Director, Geology, Hazaribagh vide Memo No. 60/G, dated 21.02.2022.

9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Giridih vide letter no. 92/EC/DEIAA/Giridih, dated 11.05.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 2373, dated 19.08.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2043862 /2018 /555, dated 24.05.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/HZB/CTO-12712571 /2022/35, dated 15.03.2022.
13	Production Report	:	Production report issued by DMO, Giridih vide letter no. 458/M, dated 05.05.2025.
15	Qualified Person	:	Shri Surendra Sai was present in the meeting and affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized mining method
2	Quarry Area	:	4.10 ha. Life of Mine – Up to the lease period i.e. 24.10.2017 to 23.10.2027.
3	Waste Generation	:	No waste will be generate
4	Stripping Ratio	:	-
5	Working Days	:	300
6	Bench: size & No	:	6m x6m
7	Elevation of Mine	:	345 AMSL to 350 AMSL
8	Ground Level Elevation	:	345 AMSL
9	Ultimate Working Depth	:	296 AMSL (49 mbgl)
10	Water Table	:	286-280 AMSL (59-65 mbgl)
11	Topography of Mine	:	The applied area represents almost flat land with rock mass of Dolerite.
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	130 litre/day

Production Details

Year	Production of Stone in Tons as per DEIAA EC Letter	Production of Stone in cum	Production of Stone in Tonne	Bench Section
1 st	486999	180370	486999	350-338

2 nd	457460	169430	457460	350-332
3 rd	439479	162770	439479	350-326
4 th	454329	168270	454329	350-320
5 th	421447	156091	421447	350-314
Total	2259714	836931	2259714	-

As per approved mine plan production: - 180370 cum/annum or 486999 TPA of Stone (Quartzite)

As per EC letter production: - 180370 cum/annum or 486999 TPA of Stone (Quartzite)
Land Use

Pattern if utilization	Existing land use (ha.)	At the end of scheme period (ha.)	At conceptual period (ha.)
Excavation	1.63	4.10	4.10 (area shall be left as rain water harvesting purpose)
Safety Zone	0.76 (Plantation)	0.76 (Plantation)	0.76 (Plantation)
Road	0.001	Nil	Nil
Total used area	2.391	4.86	4.86
Unused area	2.469	Nil	Nil
Total	4.86	4.86	4.86

ENVIRONMENT MANAGEMENT Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.76ha	1900(Already done during previous year of mining)
2	Along Approach Road	:	550 m	1100
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 3100 saplings were proposed to be planted. Out of which 1900 plant in Safety Zone area have been planted during previous year of mining.

(1100 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1200 Plants).

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	6,00,000	1,00,000
4	Construction and maintenance of haul road	2,75,000	1,50,000
TOTAL		8,75,000	4,87,000

***1200 plants * 500 Rs (for each plants including hedges and fences) = Rs. 6,00,000/-**

Note: A total of 3100 saplings were proposed to be planted. Out of which 1900 plant in Safety Zone area have been planted during previous year of mining.

(1100 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1200 Plants).

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-~150000 (including maintenance)

*** 5.0 lakh per kilometer (500000 * 0.55 km haul road = 2,75,000/-)**

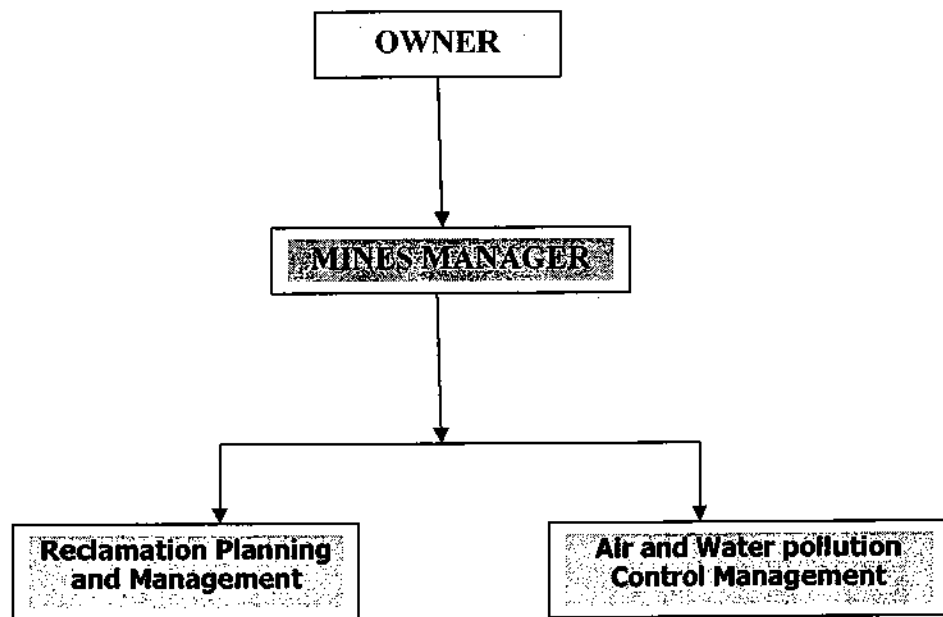
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

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Solid Waste Management

Removal waste material will be backfilled within the quarry site.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or

		system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6

4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.

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- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chahal Stone Deposit of M/s Ganpati Minerals

(Prop. : Smt. Sweta Devi), Mouza : Chahal, Thana : Deori, Distt. : Giridih, Jharkhand (4.86 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign “Ek Ped Ma Ke Naam” and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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8. **Stone Deposit of Pahridih of M/s Raj Stone Works (Partners : Shri Rahul Kumar & Others),
Village : Pahridih, Thana : Mohanpur, Distt. : Deoghar, Jharkhand (1.21 Ha).**

(Proposal no.: SIA/JH/MIN/ 513186 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Deoghar).

The project has been granted EC by DEIAA, Deoghar vide letter no. 04, dated 19.04.2017 for 16,602.96 cum/annum or 44828 TPA of Stone and 5864 cum/annum or 8796 TPA of Morrum.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Deoghar which has been taken up for consideration on 26.07.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ -96 µg/m³ PM_{2.5} -567 µg/m³ SO₂ -18.2 NO₂ - 19.0 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 731/M, dated 03.07.2025 by DMO, Deoghar is within the permissible limit of EC.

The compliance report of previous EC has been issued by Regional Officer, Regional Office-cum-Laboratory, JSPCB, Dumka vide memo no. 2396, dated 31.12.2024.

A certification of the compliance of the conditions of previous EC issued by JSPCB has been submitted to SEAC. The Committee desired to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 16591.85 cum/annum or 44194.00 TPA of Stone

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Stone Deposit of Pahridih
2	Lessee:	:	M/s Raj Stone Works, Partner - Sri Rahul Kumar and Others

			Address: At- Hardala Kund, Durga bari Road Dist- Deoghar (Jharkhand)	
3	Lease Address	:	Village - Pahridih, Thana - Mohanpur, District – Deoghar, State- Jharkhand	
4	Lease Area	:	1.21ha	Acres- 3.00Acres
5	Type of Land	:	Non-Forest (G.M. & Rayaiti Land)	
6	Project Cost	:	Rs. 1.0 Cr	
7	EMP Budget	:	Capital: Rs. 16.975 Lakhs	Recurring: 5.0 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	162181.85 cum or 437891 Tonnes of Stone	8576cum or 12864 Tonnes of Morrum
10	Mine Life	:	Up to the lease period i.e. 06.06.2017 to 05.06.2027.	
11	Man power	:	32	
12	Water Requirement	:	13.02 ~13.00KLD (Drinking: 0.32KLD, Dust Suppression: 8.09 KLD, Plantation: 4.61KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Mayurakshi River, Approx. 6.94 km towards SW direction of mine site.	
17	Nearest Habitation	:	Approx 400 m towards south direction. EMP has been submitted.	
18	Nearest Railway Station	:	Mohanpur Railway station, approx. 5.72 km towards North direction.	
19	Nearest Air Port	:	Deoghar Airport, Jharkhand approx. 7.62 km towards West direction.	
20	Nearest Forest	:	Protected Forest, Approx. 7.91 km towards NE direction of mine site.	
21	Road & Highways	:	NH-114A, Approx. 3.65 km. in WSW direction.	
22	Approach Road	:	Approx 1090m	

CO-ORDINATES

1	Latitude	:	From 24°26'42.98" N	To 24°26'45.61" N
2	Longitude	:	From 86°46'10.17" E	To 86°46'10.00" E

LAND DETAILS

Plot no.
211 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 06.06.2017 to 05.06.2027.
2	CO	:	The CO, Mohanpur (Deoghar) vide letter no. 894, dated 16.07.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II and also mentioned that the habitation at a distance of 400 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO Cluster	:	DMO, Deoghar vide memo no. 762/M, dated 15.07.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1396, dated 26.07.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Deoghar Forest Division vide letter no. 608, dated 23.02.2016 certified that the distance of forest land is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Deoghar District (Page no. 26, Sl. No. 06).
7	Gram Sabha	:	Gram Sabha conducted on 21.10.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by Additional Director, Geology, Hazaribag vide Letter No. 34/G, dated 29.04.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Deoghar vide letter no. 04, dated 19.04.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Regional Officer, Regional Office-cum-Laboratory, JSPCB, Dumka vide memo no. 2396, dated 31.12.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1664191/2017/563, dated 16.10.2017.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-1871571/2017/235, dated 10.11.2017.
13	Production Report	:	Production report issued by DMO, Deoghar vide memo no. 731/M, dated 03.07.2025

14	Qualified Person	:	The mining scheme has been prepared by B. Tirkey. As he has since deceased, he was not present in the meeting.

Working Details

1	Mining Method	:	Opencast Semi mechanized mining method	
2	Quarry Area	:	0.89ha.	Life of Mine – Up to the lease period i.e. 06.06.2017 to 05.06.2027.
3	Waste Generation	:	No waste	
4	Stripping Ratio	:	0	
5	Working Days	:	300	
6	Bench: size & No	:	3m x3m	
7	Elevation of Mine	:	233AMSL to 238AMSL	
8	Ground Level Elevation	:	233AMSL	
9	Ultimate Working Depth	:	213AMSL (20 mbgl)	
10	Water Table	:	198-193 (35-40 mbgl)	
11	Topography of Mine	:	Gently slope	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	90 litre/day	

Production Details

Year	Production of Stone in Tonnes (As per EC)	Production of Stone in Cum	Production of Stone in Tonnes (as per approved mining scheme)	Bench mRL
1 st	44604.00	14561.85	39317	235-231
2 nd	44132.00	14525.92	39220	235-231
3 rd	44194.00	16591.85	44798	232-229
4 th	44350.00	13140	35478	231-228
5 th	44828.00	16508.14	44572	229-225
Total	222108.00	75327.76	203385	-

As per approved mine plan production: - 16591.85 cum/annum or 44798 TPA of Stone

As per EC letter production: - 16591.85 cum/annum or 44194.00TPA of Stone

Land Use

Pattern of Utilization	Existing Land Use (Ha)	Proposed Current Plan Period(Ha)	Proposed Land use at End of Life of Mine (ha)	Land Usage at Conceptual Stage
Mining Area	0.06	0.89	0.89	Water body

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Road	0.00	0.01	0.01	Plantation
Safety zone	0.31 (Plantation)	0.31 (Plantation)	0.31 (Plantation)	Plantation
Total	0.37	1.21	1.21	-
Unutilized	0.84	0.00	0.00	-
Total	1.21			-

As per approved mine plan / approved mining scheme

Year	Morum in Tonnes	Morum in cum	Morum in Tonnes (as per approved mining scheme)	Bench mRL
1 st	8796	5776	8664	238-234
2 nd	8796	4672	7008	238-234
3 rd	8796	0	0	-
4 th	8796	0	0	-
5 th	8796	0	0	-
Total	43980	10448	15672	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.31ha	775 (Already done during previous year of mining)
2	Along Approach Road	:	1090 m	2180
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
2	Along Mine Road	:	0.01	25
Total				3080

Note: A total of 3080 saplings were proposed to be planted. Out of which 775 plant in Safety Zone area have been planted during previous year of mining. (2180 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat, and 25 plant along mine road) will be done in done after start of mine operation. (Total 2305 Plants).

Note – 10 % of Total plant i.e. 231 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable

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species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	11,52,500	1,00,000
4	Construction and maintenance of haul road	5,45,000	1,50,000
TOTAL		16,97,500	5,00,000

Note: *2305plants * 500 Rs (for each plants including hedges and fences) = 11.52500Lakhs
A total of 3080 saplings were proposed to be planted. Out of which 775 plant in Safety Zone area have been planted during previous year of mining. (2180 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat and 25 plant along mine road) will be done after start of mine operation. (Total 2305 Plants).

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- or 1,50,000/- (including maintenance)

*** 5.0 lakh per kilometer (500000 * 1.09 km haul road = 5,45,000 /)**

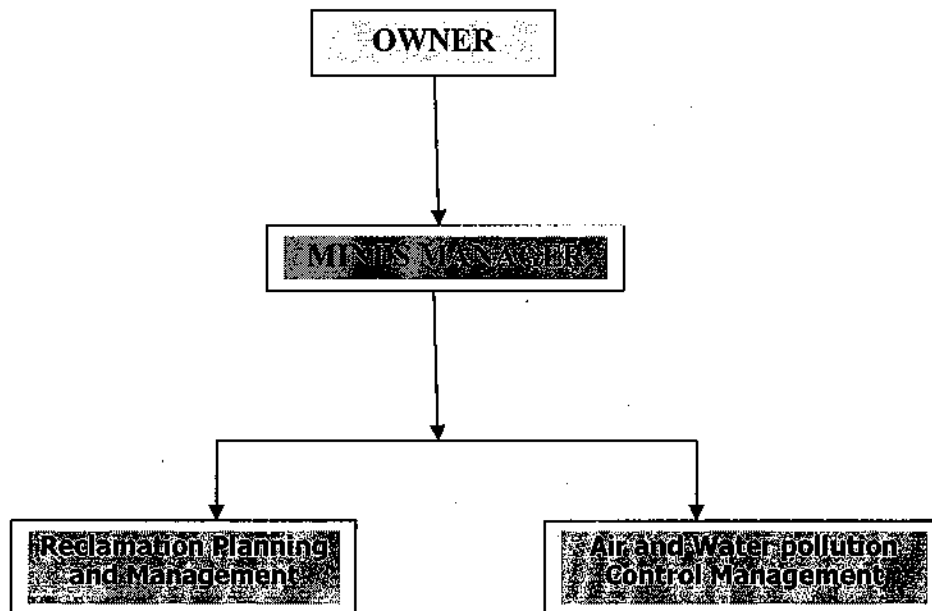
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

15672 tonne of morrum will be generated which will be sold in market.

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Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6

6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.

- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Stone Deposit of Pahridih of M/s Raj Stone Works (Partners : Shri Rahul Kumar & Others), Village : Pahridih, Thana : Mohanpur, Distt. : Deoghar, Jharkhand (1.21 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was

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required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

9. Borna Stone Mine of Shri Rajesh Kumar Choubey, Village : Borna, Thana : Ranga, Distt. : Sahibganj, Jharkhand (1.214 Ha).

(Proposal no.: SIA/JH/MIN/ 546290 /2025)

The mine plan submitted alongwith the application documents, which is duly approved by DMO, Sahibganj vide letter no. 330/M, dated 19.02.2025 is for a period up to 2024-2025. Hence, this mine plan is not valid on the date of consideration of this project.

Hence, the PAs are required to submit a valid and approved mine plan / mining scheme for consideration of the project for grant of EC.

10. Jamirtala Stone Deposit of Shri Kshitij Raj, Village : Jamirtala, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.19 Ha).

(Proposal no.: SIA/JH/MIN/ 549008 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

TOR Application for: Proposed Capacity- 83401 cum/annum or 225182 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Jamirtala Stone Deposit
2	Lessee:	: Sri Kshitij Raj At – Village Thadhi Dulampur, Ward No. - 17, Post – Deosang, Thana - Kunda, District - Deoghar, State - Jharkhand
3	Lease Address	: Mouza - Jamirtala, Thana - Shikaripara, District – Dumka, State- Jharkhand
4	Lease Area	: 2.19 Ha Acres- 5.42 Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 100.0 Lakhs
7	EMP Budget	: Capital: Rs. 18.375 lakhs Recurring: Rs. 5.70 Lakh/year
8	New or Expansion	: New
9	Mineable Reserves	: cum.:417012 cum Tonnes:1125932 tones
10	Mine Life	: 5 years
11	Man power	: 49
12	Water Requirement	: 11.84 ~ 12.00 KLD (Drinking: 0.49 KLD, Dust Suppression:4.8 KLD, Plantation:6.55 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Kanoor Nala, approx. 2.50 km towards South direction of mine site.
17	Nearest Habitation	: Nearest habitation is at 900 Meter in NW direction
18	Nearest Rail Station	: Pinargaria Railway station, approx. 5.10 km towards NNW direction
19	Nearest Air Port	: Deoghar Airport, approx. 101.20 km towards WNW direction
20	Nearest Forest	: RF, Approx. 4.00 km towards East direction of mine site. Protected Forest Approx. 2.30 km towards NNE direction of mine site.
21	Road & Highways	: NH-114A, Approx. 2.50 km in North direction.
22	Approach road	: Approx. 250 meters

CO-ORDINATES

1	Latitude	From 24°10'22.175" N	To 24°10'30.081" N
2	Longitude	From 87°39'53.988" E	To 87°40'00.929" E

LAND DETAILS

Khata no.	Plot no.
03	63, 64, 65, 68, 69 & 70

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 717/M, dated 21.05.2025.
2	CO	:	The CO, Shikaripara vide letter no. 417/Ra., dated 05.05.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyon & Register II.
3	DMO Cluster	:	DMO, Dumka vide memo no. 779/M, dated 02.06.2025 certified that 06 other mining lease area (7.06 Acre, 4.57 Acre, 6.51 Acre, 5.19 Acre, 7.37 Acre & 6.13 Acre) exists within 500 m radius from proposed project site and total area is 42.25 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 809, dated 15.05.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Dumka Forest Division vide letter no. 1066 dated 15.05.2025 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Dumka has certified vide memo no. 1006/M, dated 20.08.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 182).
7	Gram Sabha	:	Gram Sabha conducted on 09.03.2025.
8	Mine Plan Approval	:	Approved by DMO, Dumka vide Letter No. 945/M, dated 31.07.2025.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

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10	Baseline study period	:	October, 2025 to December, 2025.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.153 ha	Life of Mine – 5 Years
3	Waste Generation	:	Total 20550 cum of Gritty soil & 21947 cum of Intercalated waste shall be generated during the plan period	
4	Stripping Ratio	:	1: 0.10	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	61 AMSL to 66 AMSL	
8	Ground Level Elevation	:	61 AMSL	
9	Ultimate Working Depth	:	Up to 24 AMSL (37 mbgl)	
10	Water Table	:	18-6 AMSL (43-55 mbgl)	
11	Topography of Mine	:	The applied lease area represents a gently sloping land.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone		Intercalated waste in cum	Removal of gritty soil		Bench AMSL
	in cum	in tones		In cum	In tones	
1st	83397	225171	4389	20550	30825	66-54
2nd	83401	225182	4390	000	000	60-48
3rd	83397	225171	4389	000	000	54-42
4th	83401	225182	4390	000	000	48-36
5th	83397	225171	4389	000	000	42-24
Total	416993	1125877	21947	20550	30825	

Land Use

Pattern of Utilization	Present Land use (Ha)	At the end of plan period (Ha)	At the end of mine in (ha)	At Conceptual period (Ha)		
				Public use	Water body	Plantation
Quarry	Nil	1.53	1.53	--	1.12	0.41

		(including backfill 0.41 ha)	(including backfill 0.41 ha)			(dead bench plantation)
Green Belt within Safety Barrier	Nil	0.66 (Plantation)	0.66 (Plantation)	--	--	0.66
Road	0.02	Nil	Nil	--	--	--
Total area in use	0.02	2.19	2.19	--	1.12	1.07
Balance area unused	2.17	Nil	Nil	--	--	--
Total	2.19	2.19	2.19	2.19		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.66 ha	1650
2	Along Approach Road	:	250 m	500
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100
4	Plantation in Backfilled area over dead benches	:	0.41 ha	1025
Total				3275

Note – 10 % of total plant i.e. 328 plants will be planted as EK Ped Maa K Naam.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	16,37,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000

TOTAL	18,37,500	5,70,000

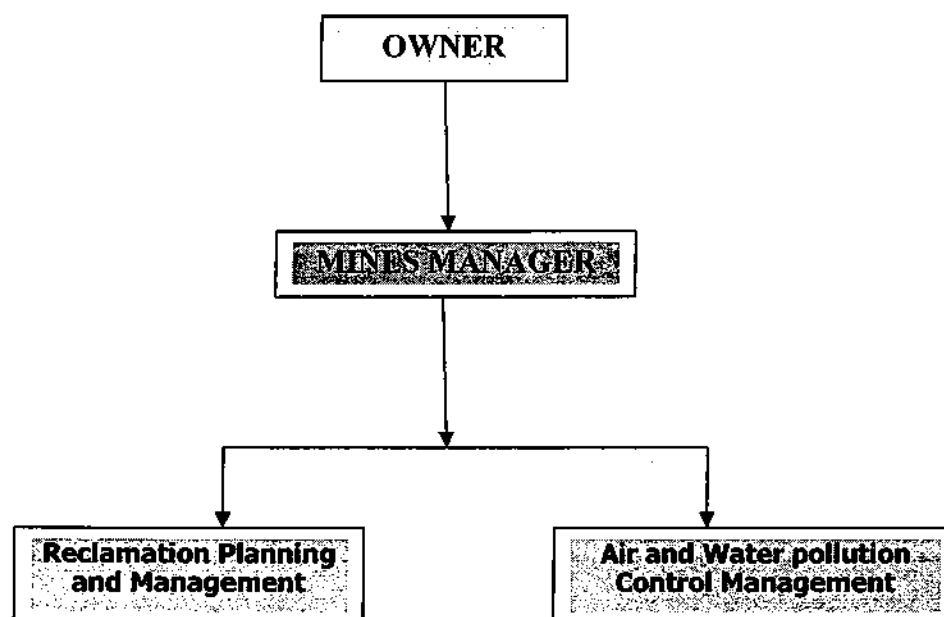
Note: *3275 plants * 500 Rs (for each plants including hedges and fences) = Rs. 16,37,500/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 150000/- (including maintenance)
*** 5.0 lakh per kilometer (5,00,000* 0.25 km haul road = 1,25,000 or 2,00,000/-)**

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 20550 cum of Gritty soil & 21947 cum of Intercalated waste will be generated during the plan period. The area is covered with a layer of gritty soil. During quarry development in 1st year gritty soil and Intercalated waste will be removed and this soil & waste will be temporarily dumped within the quarry & in 2nd year intercalated waste will be removed & this waste & existing temporarily dumped materials will be temporarily dumped within the quarry & in 3rd year intercalated waste will be removed and this waste & existing temporarily dumped materials will be temporarily dumped within the quarry & in 4th year intercalated waste will be removed and this waste & existing temporarily dumped materials will be temporarily dumped within the quarry & in 5th year intercalated waste will be removed and this waste & existing temporary dumped materials will be backfill within the exhausted quarry.



Organization Structure

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Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within

		last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale

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1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

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- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

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- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the

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factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 09, 10, 11, 12 & 13.09.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.

The bottom of the page features several handwritten signatures and initials. On the left, there is a signature that appears to be 'Nan' and another 'A'. In the center, there is a large, stylized signature with the number '619' written below it. To the right of this, there is a signature that looks like 'X' and another that is more complex, possibly 'Raj'. The page number '619' is also visible near the center signature.

11. Bankuchia Stone Deposit of M/s K.K. Builders Pvt. Ltd. (Director : Shri Vikash Singh), Village : Bankuchia, Thana : Patamda, Distt. : East Singhbhum, Jharkhand (11.74 Ha).

(Proposal no.: SIA/JH/MIN/ 547183 /2025)

Certificate from Wildlife DFO and latest cluster certificate from DMO have not been submitted alongwith the application documents despite EDS raised by SEAC.

Hence, this project will be taken up for consideration after submission of the same.

12. Proposed development of Phase – 1A & 1B i.e. Academic Blocks, Hostel Blocks, Residential Buildings and Studio Apartments in Azim Premji University Campus of Azim Premji Foundation, Mouza : Itki Thakurgaon, Tehsil : Itki, Thana : 102, Distt. : Ranchi, Jharkhand.

(Proposal no.: SIA/JH/INFRA2/ 549601 /2025)

During the consideration of the project the following further details were required to the submitted by the Project Authorities:

- i. A 15% of green area was proposed in the submitted proposal. The PAs are required to submit a proposal of minimum of 15% green belt and the green area should be over and above of green belt. It is also required to propose green belt all along the boundary of the project premises.
- ii. Solid waste handing areas were not suitably located. Hence, the proposal should be revised to include Solid waste handing areas at all essential locations. Location of OWC alongwith capacity should be suitably earmarked on the site lay out plan.
- iii. Provide a rainwater harvesting pits as per the drainage pattern of the site.
- iv. Location of Rainwater storage tanks are to be clearly marked on the site lay out plan.
- v. The Project Authorities need to assure that excavated soil for the construction of the underpass will be used within the premises.
- vi. A revised energy conservation plan is to be submitted to include solar power generation of a minimum of 05% of the entire load. Overall energy conservation of 20% of the entire load.
- vii. Revised land use details to be provided to include all the activity of the project.
- viii. Assurance for source of water during construction and operation phase is to be obtained from the competent authorities and to be submitted alongwith the application.
- ix. Revised EMP proposal is to be submitted.

Hence, the proposal will be taken up for consideration after submission of above required documents.

13. Bhatbigha Stone Deposit of M/s Shree Nath Stone Mine (Prop. : Shri Natho Yadav), Mouza : Bhatbigha, Thana : Chauparan, Thana no. : 185, Distt. : Hazaribagh, Jharkhand (1.165 Ha).

(Proposal no.: SIA/JH/MIN/ 549190 /2025)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Boulder Stone:18159 Cum Per Annum /50846Tonnes Per Annum.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	: Bhatbigha Stone Deposit
2	Lessee:	: M/S Shree Nath Stone Mine Proprietor- Shri Natho Yadav
3	Lease Address	: Mauza- Bhatbigha, Thana No.-185, Thana-Chauparan, Anchal- Chauparan, District- Hazaribagh, Jharkhand
4	Lease Area	: Ha:1.165 ha Acres:2.88Acres
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: 50.0 Lakhs
7	EMP Budget	: Capital: 18.11Lakhs Recurring:9.58Lakh / year
8	New or Expansion	: New Project
9	Mineable Reserves	: 90620 cum /253737Tonnes
10	Mine Life	: 05 years (04 years 11 months) Lease Period: 04 years 11 months
11	Man power	: 30 Persons
12	Water Requirement	: 9.841 KLD= 0.30 KLD (Drinking & Domestic Uses) + 7.011 (Plantation) KLD + 2.53 KLD (Dust Suppression).
13	Water Source	: From Nearby villages by private water tankers.
14	DG Set / power	: 60 KVA
15	Crusher	: Not Present
16	Nearest Water Body	: Margoja River, approx. 2.85 Km towards WNW. Tilaiya Dam Reservoir, approx. 2.15 Km towards SSW.
17	Nearest Habitation	: Bhatbigha, approx. 370 m towards North direction. (EMP Submitted)
18	Nearest Rail Station	: Urwan Railway Station, approx. 6.70 km towards SE direction.
19	Nearest Air Port	: Gaya International Airport, approx. 61.90 km towards NW direction. Birsamunda Airport, Ranchi, approx. 118.80 km towards SSW direction. (Source: Google earth & Aerial Distance)
20	Nearest Forest	: Protected Forest, approx. 1.30 Km towards NNW.

			Protected Forest, approx. 7.85 Km towards North. Protected Forest, approx. 6.80 Km towards WSW. Protected Forest, approx. 5.70 Km towards ESE.
21	Road & Highways	:	NH 20, Ranchi-Patna Road, approx. 5.10 km towards SSE direction.
22	Interstate Boundary	:	Nil
23	Approach Road	:	Road towards Bhatbigha and Chandwara, approx. 250 m towards East direction.

CO-ORDINATES

1	Latitude	From 24°23'03.045"N	To 24°23'07.401" N
2	Longitude	From 85°24'23.723"E	To 85°24'30.099" E

LAND DETAILS

Khata no.	Plot no.
40	619, 620, 618 (P) & 617 (P)
12	601 (P)
62	603
06	602
33	604, 612, 614, 632, 608, 610 & 615
01	611, 613, 616, 607 & 609 (P)
56	605 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Hazaribag vide memo no. 1499/Khanan, dated 24.12.2024.
2	CO	:	The CO, Chauparan (Hazaribag) vide letter no. 1359, dated 02.11.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Hazaribag vide memo no. 989/Khanan, dated 06.08.2025 certified that 02 other LoI (2.20 Acre & 2.20 Acre) exists within 500

			m radius from proposed project site and total area is 7.28 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 436, dated 28.02.2023 certified that the proposed project site is outside Eco Sensitive Zone of Gautambudha Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag West Forest Division vide letter no. 1681, dated 25.03.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Sl. no. 06, Page no. 143).
7	Gram Sabha	:	Gram Sabha conducted on 15.02.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology District Geological Office, Hazaribag vide Memo No. 59, dated 30.07.2025.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Method, Mechanized Mine, Wagon Drilling & Control Blasting will be deployed.
2	Quarry Area	:	0.712 ha.
3	Waste Generation	:	5 years-5964 cum gritty soil & 4768 cum intercalated waste
4	Stripping Ratio	:	1:0.04
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	382-377m AMSL
8	Ground Level Elevation	:	377m AMSL
9	Ultimate Working Depth	:	358m AMSL
10	Water Table	:	351 m AMSL
11	Topography of Mine	:	A moderately sloping land
12	Explosive Requirement	:	31.5 Kg/day
13	Diesel/Fuel requirement	:	496 Litres/day

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Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Intercalated waste in Cum	Removal of Gritty Soil in cum
1st	18116	50726	954	5964
2nd	18067	50588	951	000
3rd	18078	50619	952	000
4th	18137	50785	955	000
5th	18159	50846	956	000
Total	90557	253564	4768	5964

Land Use

Type of Land	Present Land Use (in Ha)	At the End of Plan Period (In Ha)	At the end of Mine (In Ha)	Conceptual Period (In Ha)		
				Public use	Water Body	Plantation
Quarry	0.095	0.712 (Including backfilling 0.205 Ha.)	0.712 (Including backfill 0.205 Ha.)	---	0.433	0.279 (Dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.453	0.453	---	---	0.453
Road	0.106	Nil	Nil	---	---	---
Total Area in Use	0.201	1.165	1.165	---	0.433	0.732
Balanced Area unused	0.964	Nil	Nil	---	---	---
Total Applied Area	1.165	1.165	1.165	1.165		

ENVIRONMENT MANAGEMENT**Green Belt Development**

	Area in Ha	No. of Plantation	1 st Year Plantation	2 nd Year Plantation	3 rd Year Plantation	4 th Year Plantation	5 th Year Plantation
Area in safety Zone	0.453	1133	1133	Nursing & Protection			

Backfilled area	-	-	-	
Dead Benches	0.279	698	698	
Approach Road 253 m	-	506	506	
	Total	2337	2337	

10% of the total green belt proposed (2337 Plantation) will be dedicated to "Ek Ped Maa ke Nam".

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Quantity of HSD/ Fuel consumption per day of Bhatbigha Stone Deposit

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machine=1 Diesel consumption in one shift working. (i.e- 10 liters) =1*8*10=80liters	80liters
2	Excavator	Number of Machine=1 Diesel consumption in one shift working. (i.e- 07litre/hr) =1*8*7=56 liters	56 liters
3	Tippers	Number of Tippers=02 Diesel consumption in one shift working. (i.e- 4ltr/hr.) =02*10*4=80	80 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr.) =1*10*16=160 liters	160 liters
5	Water Sprinkler	Number of Sprinkler=01 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr.)	20 liters

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		=1*10*2=20 liters.	
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			496

PROJECT COST:

S.No	Particular	Capital Cost (in Lakhs)	Recurring Cost (in Lakhs)
1	Lease Expense	8	0
2	Mining and Machinery	8	2
3	Cost of infrastructure	5	0.5
4	Employment	27	0
5	Miscellaneous	2	0
TOTAL		50	2.5

Environment Management Plan:

S.NO	Particulars	Annual Budget Provisions (Lakh)	
A)Site Facilities		Capital Cost (In Lakh)	Recurring cost (In Lakh)
1	a) Water sprinkling facility with solar pump / diesel pump b) Cost of Water Rs. 500/Tanker/day (Capacity 5 KL x 2 No.) (500X 2 X 300)	1.0	3.0
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x	0.75	0.15
3	Road Development and Maintenance (Road length approx.253m, Width 5.0 mt.)	0.5	0.2
4	Plantation over the periphery of the project (2337 saplings). 2337*40= 0.93 Lakh Tree Guard: 2337*100=2.33 Lakhs	3.26	1.30
5	PUC certification of vehicles and maintenance	-	0.10
Sub Total(A)		5.51	4.75
B)Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with solar	1.0	0.10
2	Toilets 2 nos. (Rs 25000 x 2)	0.50	0.05
3	Occupational health checkup in a year for 30 workers (@twice/year) @200*2*30 and onsite first aid set-up	0.12	0.05
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (30 x 3000)	0.90	0.30

5	Vocational training on mining methods and safe work practices (@twice/year) @ 250 x 2 x 30)	-	0.15
Sub Total(B)		2.52	0.65
C)Emergency Rescue Plan			
1	Fire Extinguishers (1 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit	0.50	0.01
2	Safety signage and warning boards like sirens, red flags, cones etc.	0.50	0.05
Sub Total(C)		1.0	0.06
D)Solid Waste Management			
1	a) Bins 2 Nos. @ Rs. 1500 each	0.03	0.05
	b) Pit and Composting	0.05	
Sub Total(D)		0.08	0.05
E)Monitoring Program			
1	a) Ambient Air Quality	-	0.20
	b) Water Quality	-	0.20
	c) Noise Quality	-	0.07
	d) Soil Quality	-	0.10
Sub Total(E)		-	0.57
(F) Protection of Habitation due to blasting and other allied mining operation		9.00	3.50
Grand Total(A+B+C+D+E+F)		18.11	9.58

MONITORING FREQUENCY

Particulars	Monitoring Frequencies	Location	Important Monitoring Parameters
Water Quality Monitoring	Twice in a year at two locations	One Surface Water and One Ground Water from the nearest source.	pH, SS, TDS, Iron, Hardness, Alkalinity Chlorides, Nitrates Sulphate & Fluorides
Ambient air monitoring	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	PM ₁₀ , PM _{2.5} , SO _x and NO _x
Noise Pollution	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	Level in dB(A) and dB(C)
Soil Sampling	Twice in a year at two locations	Nearby agriculture land located in downwind direction	pH, Conductivity, Sulphate, Nitrate, Phosphates, Alkalinity & texture.

Waste Management

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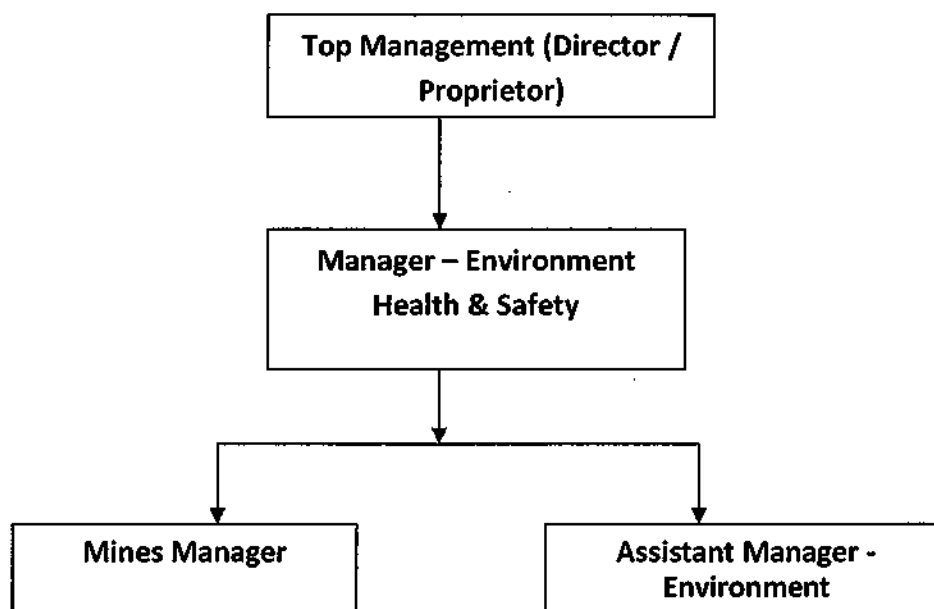




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- During quarry development in 1st year gritty soil and intercalated waste will be removed and this soil & waste will be temporarily dumped [Area - 0.138 Ha, (L x W x H = 60m x 23m x 5m)] within the quarry & in 2nd year intercalated waste will be removed & this will be used in haul road dressing and existing temporary dumped materials will be temporarily dumped [Area – 0.138 Ha, (L x W x H = 56m x 24m x 5m)] within the quarry & in 3rd year intercalated waste will be removed & this will be used in haul road dressing and existing temporary dumped materials will be temporarily dumped [Area – 0.138 Ha, (L x W x H = 50m x 27m x 5m)] within the quarry & in 4th year intercalated waste will be removed & this will be used in haul road dressing and existing temporary dumped materials will be temporarily dumped [Area – 0.138 Ha, (L x W x H = 44m x 31m x 5m)] within the quarry & in 5th year intercalated waste will be removed & this will be used in haul road dressing and existing temporary dumped materials will be backfill within the exhausted quarry.

Organization Structure



S. No.	Designation	Proposed responsibility
1	Top Management (Director / Proprietor)	Overall, in-charge of operation of environment management facilities; Ensuring legal compliance by properly undertaking activities as laid down by various regulatory agencies from time to time and interacting with the same.
2	Manager – Environment Health & Safety	- Interaction with Environmental Consultant. - Scheduling regular health check-up of the employee. - Submission of Monitoring Report as per Schedule - Environment Budget and sanctions.

S. No.	Designation	Proposed responsibility
4	Mine Manager	• Execution of Greenbelt development, Environmental Monitoring execution activities near site as per CSR and working procedure framed out by EHS officer. • Drilling and blasting supervision. • Supervision of Slope stability and mining operations
3	Assistant Manager – Environnement	• Implementation of EMP • Allotment of daily job • Field visit • Liaison with MOEF&CC/SPCB

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT



Handwritten signatures and initials are present at the bottom of the page, including a signature on the left, the letter 'A' in the center, a signature with '1629' below it, a signature with a large 'X' mark, and a signature on the right.

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1

C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20

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7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.

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- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

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- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired



Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bhatbigha Stone Deposit of M/s Shree Nath Stone Mine (Prop. : Shri Natho Yadav), Mouza : Bhatbigha, Thana : Chauparan, Thana no. : 185, Distt. : Hazaribagh, Jharkhand (1.165 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal

(<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.

- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**14. Bhatbigha Stone Deposit of M/s Maa Vaisno Stone Mine (Prop. : Shri Prakash Yadav),
Mouza : Bhatbigha, Thana : Chauparan, Thana no. : 185, Distt. : Hazaribagh, Jharkhand (0.89
Ha).**

(Proposal no.: SIA/JH/MIN/ 548945 /2025)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

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EC Application for: Boulder Stone:8499 Cum Per Annum /23796Tonnes Per Annum

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	: Bhatbiga Stone Deposit
2	Lessee:	: M/S Maa Vaisno Stone Mine Proprietor- Shri Prakash Yadav
3	Lease Address	: Mauza- Bhatbiga, Thana No.-185, Thana-Chauparan, Anchal-Chauparan, District- Hazaribagh, Jharkhand
4	Lease Area	: Ha:0.89 ha Acres:2.20Acres
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: 45.0 Lakhs
7	EMP Budget	: Capital: 8.65Lakhs Recurring:5.86 Lakh / year
8	New or Expansion	: New Project
9	Mineable Reserves	: 84266 cum /235944Tonnes
10	Mine Life	: 10 years Lease Period: 10 years
11	Man power	: 26
12	Water Requirement	: 9.17 KLD= 0.26 KLD (Drinking & Domestic Uses) + 6.06(Plantation) KLD + 2.85 KLD (Dust Suppression).
13	Water Source	: From Nearby villages by private water tankers.
14	DG Set / power	: 60 KVA
15	Crusher	: Not Present
16	Nearest Water Body	: Margoja River, approx. 3.00 Km towards NW. Tilaiya Dam Reservoir, approx. 1.50 Km towards SSW.
17	Nearest Habitation	: Bhatbiga, approx. 550 m towards NNW direction.
18	Nearest Rail Station	: Urwan Railway Station, approx. 6.50 km towards ESE direction.
19	Nearest Air Port	: Gaya International Airport, approx. 60.0 km towards NW direction. Birsu Munda Airport, Ranchi, approx. 118.30 km towards SSW direction. (Source: Google earth & Aerial Distance)
20	Nearest Forest	: Protected Forest, approx. 2.20 Km towards NNW. Protected Forest, approx. 3.20 Km towards NNE.
21	Road & Highways	: NH 20, Ranchi-Patna Road, approx. 7.50 km towards East direction.
22	Interstate Boundary	: Nil
23	Approach Road	: Road towards Bhatbiga and Chandwara, approx. 285 m towards NE direction.

CO-ORDINATES

1	Latitude	From 24°22'58.095"N	To 24°23'02.057"N
2	Longitude	From 85°24'27.886" E	To 85°24'32.925" E

LAND DETAILS

Khata no.	Plot no.
06	557, 558 & 591
15	559 & 589
59	560 & 590
19	561
64	562
62	563
35	564
01	565
23	567 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Hazaribag vide memo no. 1500/Khanan, dated 24.12.2024.
2	CO	:	The CO, Chauparan (Hazaribag) vide letter no. 271, dated 04.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar & Register II.
3	DMO Cluster	:	DMO, Hazaribag vide memo no. 988/Khanan, dated 06.08.2025 certified that 02 other LoI (2.20 Acre & 2.88 Acre) exists within 500 m radius from proposed project site and total area is 7.28 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 471, dated 18.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Gautambudha Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag West Forest Division vide letter no. 3825, dated 29.06.2024 certified that the distance of notified forest is more than 250 meters from proposed project site.






6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Sl. no. 09, Page no. 144).
7	Gram Sabha	:	Gram Sabha conducted on 18.06.2024.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology District Geological Office, Hazaribag vide Memo No. 58, dated 30.07.2025.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Method, Mechanized Mine, Wagon Drilling & Control Blasting will be deployed.
2	Quarry Area	:	0.532 ha.
3	Waste Generation	:	5 years– 3328 cum gritty soil & 2225 cum intercalated waste
4	Stripping Ratio	:	1:0.04
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	378-375m AMSL
8	Ground Level Elevation	:	375m AMSL
9	Ultimate Working Depth	:	354m AMSL
10	Water Table	:	351 m AMSL
11	Topography of Mine	:	A moderately sloping land
12	Explosive Requirement	:	31.5 Kg/day
13	Diesel/Fuel requirement	:	496 Litres/day

Production Details

Year	Production of stone in Cum	Production of stone In Tonnes	Intercalated waste In Cum	Removal of Gritty Soil In cum
1st	8421	23579	443	843
2nd	8431	23608	444	1065
3rd	8499	23796	447	923
4th	8431	23608	444	497
5th	8499	23796	447	000

Total	42281	118387	2225	3328

Land Use

Type of Land	Present Land Use (in Ha)	At the End of Plan Period (In Ha)	At the end of Mine (In Ha)	Conceptual Period (In Ha)		
				Public use	Water Body	Plantation
Quarry	0.052	0.532 (Including dump 0.111 Ha.)	0.532 (Including backfill 0.150 Ha.)	---	0.310	0.222 (Dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.356	0.356	---	---	0.356
Road	0.006	Nil	Nil	---	---	---
Blocked Area due to Road safety	0.002	0.002	0.002	0.002	---	---
Total Area in Use	0.060	0.890	0.890	0.002	0.310	0.578
Balanced Area unused	0.830	Nil	Nil	---	---	---
Total Applied Area	0.890	0.890	0.890	0.890		

ENVIRONMENT MANAGEMENT

Green Belt Development

	Area in Ha	No. of Plantation	1 st Year Plantation	2 nd Year Plantation	3 rd Year Plantation	4 th Year Plantation	5 th Year Plantation
Area in safety Zone + Blocked Area due to Road safety	0.358	895	895	Nursing & Protection			
Backfilled area	-	-	-				
Dead Benches	0.222	555	555				

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Approach Road 285 m	-	570	570	
	Total	2020	2020	

10% of the total green belt proposed (202Plantation) will be dedicated to “Ek Ped Maa ke Nam”.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

MONITORING FREQUENCY

Particulars	Monitoring Frequencies	Location	Important Monitoring Parameters
Water Quality Monitoring	Twice in a year at two locations	One Surface Water and One Ground Water from the nearest source.	pH, SS, TDS, Iron, Hardness, Alkalinity Chlorides, Nitrates Sulphate & Fluorides
Ambient air monitoring	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	PM ₁₀ , PM _{2.5} , SO _x and NO _x
Noise Pollution	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	Level in dB(A) and dB(C)
Soil Sampling	Twice in a year at two locations	Nearby agriculture land located in downwind direction	pH, Conductivity, Sulphate, Nitrate, Phosphates, Alkalinity & texture.

Waste Management

During quarry development in 1st & 2nd year gritty soil and intercalated waste will be removed and this soil & waste will be temporarily dumped [Area - 0.025 Ha, (L x W x H = 17m x 15m x 5m) & Area - 0.030 Ha, (L x W x H = 19m x 16m x 5m)] at the south-west part of the area with suitable precaution like constructing parapet wall, garland drain & in 3rd year gritty soil & intercalated waste will be removed and this soil, waste & existing temporary dumped materials will be temporarily dumped [Area – 0.083 Ha, (L x W x H = 30m x 28m x 5m)] within

the quarry & in 4th year gritty soil & intercalated waste will be removed and this soil, waste & existing temporary dumped materials will be temporarily dumped [Area – 0.102 Ha, (L x W x H = 43m x 24m x 5m)] within the quarry & in 5th year intercalated waste will be removed and this waste & existing temporary dumped materials will be temporarily dumped [Area – 0.110 Ha, (L x W x H = 45m x 25m x 5m)] within the quarry . In conceptual period total removed intercalated waste & plan period temporarily dumped material together will be backfill within the exhausted quarry.

Quantity of HSD/ Fuel consumption per day of Bhatbigha Stone Deposit

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machine=1 Diesel consumption in one shift working. (i.e- 10 liters) =1*8*10=80liters	80liters
2	Excavator	Number of Machine=1 Diesel consumption in one shift working. (i.e- 07litre/hr) =1*8*7=56 liters	56 liters
3	Tippers	Number of Tippers=02 Diesel consumption in one shift working. (i.e- 4ltr/hr.) =02*10*4=80	80 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr.) =1*10*16=160 liters	160 liters
5	Water Sprinkler	Number of Sprinkler=01 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr.) =1*10*2=20 liters.	20 liters
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			496

PROJECT COST:

S.No	Particular	Capital Cost (in Lakhs)	Recurring Cost (in Lakhs)
1	Lease Expense	7	0
2	Mining and Machinery	8	2
3	Cost of infrastructure	5	0.5

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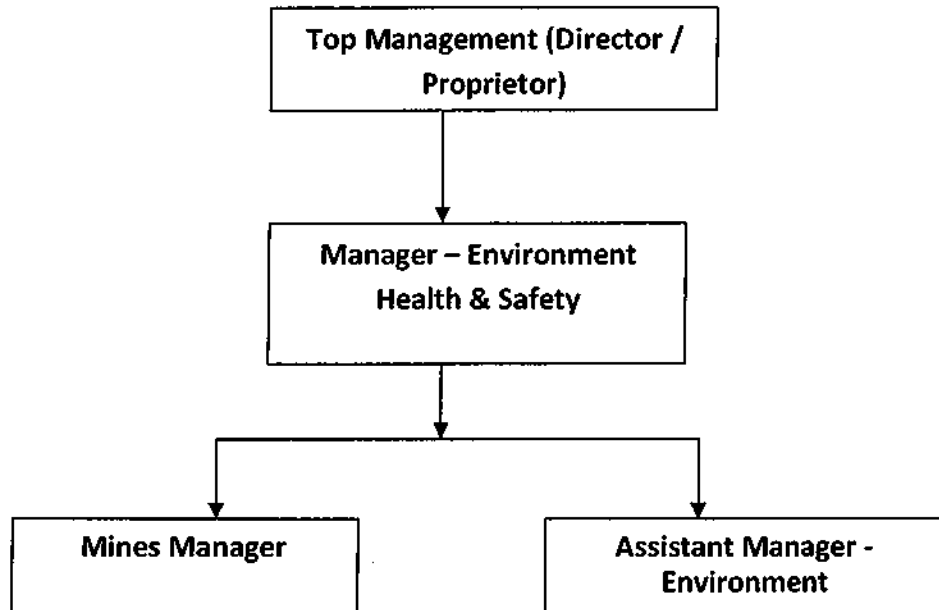
4	Employment	23	0
5	Miscellaneous	2	0
TOTAL		45	2.5

Environment Management Plan:

S.NO	Particulars	Annual Budget Provisions (Lakh)	
		Capital Cost (In Lakh)	Recurring cost (In Lakh)
A)Site Facilities			
1	a) Water sprinkling facility with solar pump / diesel pump b) Cost of Water Rs. 500/Tanker/day (Capacity 5 KL x 2 No.) (500X 2 X 300)	1.0	3.0
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x 2No.)	0.75	0.15
3	Road Development and Maintenance (Road length approx.285m, Width 5.0 mt.)	0.6	0.2
4	Plantation over the periphery of the project (2020 saplings). 2020*40= 0.81 Lakh Tree Guard: 2020*100=2.02Lakhs	2.83	1.20
5	PUC certification of vehicles and maintenance	-	0.10
Sub Total(A)		5.18	4.65
B)Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with solar light	1.0	0.10
2	Toilets 2 nos. (Rs 25000 x 2)	0.50	0.05
3	Occupational health checkup in a year for 26 workers (@twice/year) @200*2*26 and onsite first aid set-up	0.11	0.05
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (26 x 3000)	0.78	0.20
5	Vocational training on mining methods and safe work practices (@twice/year) @ 250 x 2 x 26)	-	0.13
Sub Total(B)		2.39	0.53
C)Emergency Rescue Plan			
1	Fire Extinguishers (1 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit	0.50	0.01
2	Safety signage and warning boards like sirens, red flags, cones etc.	0.50	0.05
Sub Total(C)		1.0	0.06
D)Solid Waste Management			
1	a) Bins 2 Nos. @ Rs. 1500 each	0.03	0.05
	b) Pit and Composting	0.05	
Sub Total(D)		0.08	0.05
E)Monitoring Program			
1	a) Ambient Air Quality	-	0.20
	b) Water Quality	-	0.20
	c) Noise Quality	-	0.07
	d) Soil Quality	-	0.10

Sub Total(E)	-	0.57
Grand Total(A+B+C+D+E)	8.65	5.86

Organization Structure



S. No.	Designation	Proposed responsibility
1	Top Management (Director / Proprietor)	Overall, in-charge of operation of environment management facilities; Ensuring legal compliance by properly undertaking activities as laid down by various regulatory agencies from time to time and interacting with the same.
2	Manager – Environment Health & Safety	- Interaction with Environmental Consultant. - Scheduling regular health check-up of the employee. - Submission of Monitoring Report as per Schedule - Environment Budget and sanctions.
4	Mine Manager	- Execution of Greenbelt development, Environmental Monitoring execution activities near site as per CSR and working procedure framed out by EHS officer. - Drilling and blasting supervision. - Supervision of Slope stability and mining operations
3	Assistant Manager – Environment	- Implementation of EMP - Allotment of daily job - Field visit - Liaison with MOEF&CC/SPCB

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.

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- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one

		within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12

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3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement

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- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

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- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

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of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bhatbigha Stone Deposit of M/s Maa Vaisno Stone Mine (Prop. : Shri Prakash Yadav), Mouza : Bhatbigha, Thana : Chauparan, Thana no. : 185, Distt. : Hazaribagh, Jharkhand (0.89 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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**15. Tepsa Stone Deposit of M/s Siddhartha Construction (Partner : Shri Anuj Kumar & Others),
Mouza : Tepsa, Thana : Ichak, Thana no. : 39, Distt. : Hazaribagh, Jharkhand (0.712 Ha).**

(Proposal no.: SIA/JH/MIN/ 550037 /2025)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Boulder Stone:13944 Cum Per Annum /37649Tonnes Per Annum.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	: Tepsa Stone Deposit
2	Lessee:	: M/S Siddhartha Construction Partner- Shri Anuj Kumar
3	Lease Address	: Mauza- Tepsa, Thana No.-39, Thana-Ichak, Anchal- Ichak, District- Hazaribagh, Jharkhand
4	Lease Area	: Ha:0.712 ha Acres:1.76Acres
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: 40.0 Lakhs
7	EMP Budget	: Capital: 17.19Lakhs Recurring:9.41 Lakh / year
8	New or Expansion	: New Project
9	Mineable Reserves	: 93480 cum/252396Tonnes
10	Mine Life	: 07 years Lease Period: 10 years
11	Man power	: 15
12	Water Requirement	: 9.291 KLD= 0.15 KLD (Drinking & Domestic Uses) + 5.013 (Plantation) KLD + 4.08 KLD (Dust Suppression).
13	Water Source	: From Nearby villages by private water tankers
14	DG Set / power	: 60 KVA
15	Crusher	: Not Present
16	Nearest Water Body	: Siwane River, approx. 0.81 Km towards SSW.
17	Nearest Habitation	: Sasam, approx. 200 m towards WNW direction. (EMP Submitted)
18	Nearest Rail Station	: Hazaribagh Town Railway Station, approx. 11.11 km towards SW direction.
19	Nearest Air Port	: Birsa Munda Airport, Ranchi, approx. 83.17 km towards South direction. (Source: Google earth & Aerial Distance)
20	Nearest Forest	: Canary PF, approx. 4.18 Km towards South. Karimati PF, approx. 3.57 Km towards SE.

21	Road & Highways	:	NH 20 (Ranchi- Patna Road), approx. 1.43 km towards West direction.
22	Interstate Boundary	:	Nil
23	Approach Road	:	Road towards NH-20, approx. 408 meters towards NW.

CO-ORDINATES

1	Latitude		From 24°3' 52.223" N	To 24°3' 55.590" N
2	Longitude		From 85°24' 13.990" E	To 85°24' 18.839"E

LAND DETAILS

Khata no.	Plot no.
21	87 & 92 (P)
27	100

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Hazaribag vide memo no. 1490/Khanan, dated 23.12.2024.
2	CO	:	The CO, Ichak, Hazaribag vide letter no. 120, dated 24.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Hazaribag vide memo no. 876/Khanan, dated 17.07.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 843, dated 26.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag West Forest Division vide letter no. 266, dated 18.01.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.

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6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Sl. no. 22, Page no. 145).
7	Gram Sabha	:	Gram Sabha conducted on 08.11.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology District Geological Office, Hazaribag vide Memo No. 72, dated 01.09.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Method, Semi-Mechanized Mine, Wagon Drilling & Control Blasting will be deployed.
2	Quarry Area	:	0.389 ha.
3	Waste Generation	:	5 years–19516 cum waste
4	Stripping Ratio	:	1:0.113
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	594-590m AMSL
8	Ground Level Elevation	:	590m AMSL
9	Ultimate Working Depth	:	575 m AMSL
10	Water Table	:	550 m AMSL
11	Topography of Mine	:	Undulating small hillocks
12	Explosive Requirement	:	21.26MT/Kg
13	Diesel/Fuel requirement	:	456Litres/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Total Waste in Cum
1st	11685	31550	7913
2nd	12152	32811	4248
3rd	12776	34494	672
4th	13321	35966	701
5th	13944	37649	5982
Total	63878	172471	19516

Land Use

LAND USE PATTERN			
Land Utilization	Existing Land Use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	0.389	0.389 (0.111 ha area shall be backfilled, 0.168 ha area shall be left as water reservoir and 0.110 ha left as dead benches).
Waste Dump	NIL	0.0 (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Road	NIL	0.0 (comes under quarry)	0.000
Safety Zone Plantation	NIL	0.323	0.323
Total	0.000	0.712	0.712
Unused Area	0.712	0.0	0.000
Total Lease Area	0.712		

ENVIRONMENT MANAGEMENT

Green Belt Development

	Area in Ha	No. of Plantation	1 st Year Plantation	2 nd Year Plantation	3 rd Year Plantation	4 th Year Plantation	5 th Year Plantation
Area in safety Zone	0.323	517	517	Nursing & Protection			
Backfilled area	0.111	178	178				
Dead Benches	0.110	176	176				
Approach Road 408 m	-	816	816				
Total		1687	1687				

10% of the total green belt proposed (168 Plantation) will be dedicated to "Ek Ped Maa ke Nam".

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development,

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Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

MONITORING FREQUENCY

Particulars	Monitoring Frequencies	Location	Important Monitoring Parameters
Water Quality Monitoring	Twice in a year at two locations	One Surface Water and One Ground Water from the nearest source.	pH, SS, TDS, Iron, Hardness, Alkalinity Chlorides, Nitrates Sulphate & Fluorides
Ambient air monitoring	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	PM ₁₀ , PM _{2.5} , SO _x and NO _x
Noise Pollution	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	Level in dB(A) and dB(C)
Soil Sampling	Twice in a year at two locations	Nearby agriculture land located in downwind direction	pH, Conductivity, Sulphate, Nitrate, Phosphates, Alkalinity & texture.

Waste Management

In this applied lease area, the stone deposit is covered with 2m layer of intermixed gritty soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 19516 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 9758 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 9758cum insitu 12197.50 cum loose & 10367.88cum compact waste shall be temporarily stacked & dumped in western side of the applied lease area, up to fourth year & during the fifth year the generated waste and waste materials of past dumping shall be removed and used for backfilling of exhausted part of the quarry in eastern part of the area and it will cover 0.055ha area.

Quantity of HSD/ Fuel consumption per day of Tepsa Stone Deposit

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machine=1 Diesel consumptionin one shift working. (i.e- 10 liters) =1*8*10=80liters	80liters
2	Excavator	Number of Machine=1 Diesel consumptionin one shift working. (i.e-	56 liters

		07litre/hr) =1*8*7=56 liters	
3	Tippers	Number of Tippers=01 Diesel consumption in one shift working. (i.e-4ltr/hr.) =01*10*4=40	40 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr.) =1*10*16=160 liters	160 liters
5	Water Sprinkler	Number of Sprinkler=01 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr.) =1*10*2=20 liters.	20 liters
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			456

PROJECT COST:

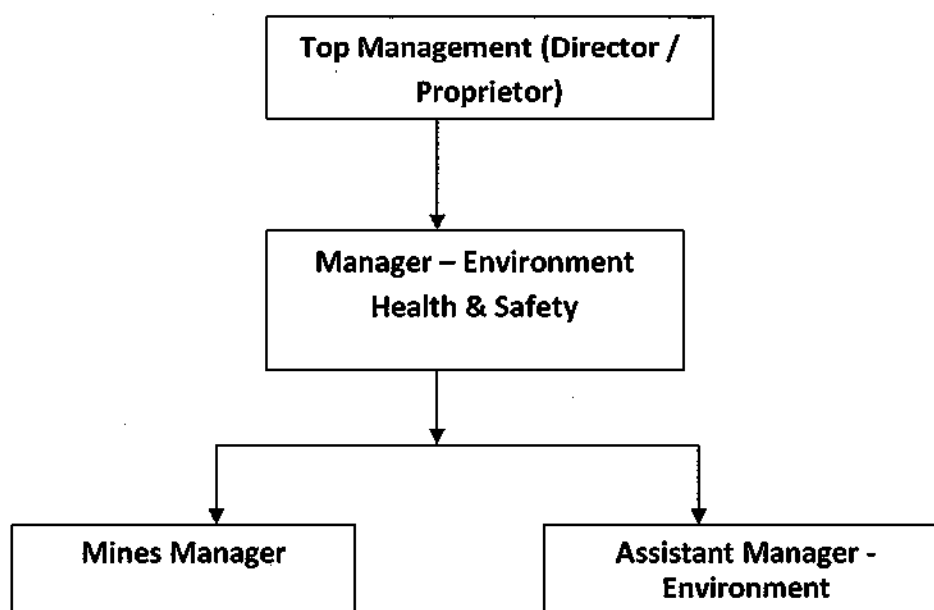
S.No	Particular	Capital Cost (in Lakhs)	Recurring Cost (in Lakhs)
1	Lease Expense	10	0
2	Mining and Machinery	8	2
3	Cost of infrastructure	6	0.5
4	Employment	14	0
5	Miscellaneous	2	0
TOTAL		40	2.5

Environment Management Plan:

S.NO	Particulars	Annual Budget	
A)Site Facilities		Capital Cost (In Lakh)	Recurring cost (In Lakh)
1	a) Water sprinkling facility with solar pump / diesel pump b) Cost of Water Rs. 500/Tanker/day (Capacity 5.0 KL x 2 No.) (500X 2 X 300)	1.0	3.0
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x 2No.)	0.75	0.15
3	Road Development and Maintenance (Road length approx. 400m, Width 5.0 mt.)	1.0	0.4
4	Plantation over the periphery of the project (1687 saplings). 1687*40= 0.67 Lakh	2.35	1.20
5	PUC certification of vehicles and maintenance	-	0.10
Sub Total(A)		5.10	4.85

B)Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with solar light	1.0	0.10
2	Toilets 2 nos. (Rs 25000 x 2)	0.50	0.05
3	Occupational health checkup in a year for 15 workers (@twice/year) @200*2*15 and onsite first aid set-up	0.06	0.05
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (15 x 3000)	0.45	0.10
5	Vocational training on mining methods and safe work practices (@twice/year) @ 250 x 2 x 15)	-	0.08
Sub Total(B)		2.01	0.38
C)Emergency Rescue Plan			
1	Fire Extinguishers (1 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit	0.50	0.01
2	Safety signage and warning boards like sirens, red flags, cones etc.	0.50	0.05
Sub Total(C)		1.0	0.06
D)Solid Waste Management			
1	a) Bins 2 Nos. @ Rs. 1500 each	0.03	0.05
	b) Pit and Composting	0.05	
Sub Total(D)		0.08	0.05
E)Monitoring Program			
1	e) Ambient Air Quality	-	0.20
	f) Water Quality	-	0.20
	g) Noise Quality	-	0.07
	h) Soil Quality	-	0.10
Sub Total(E)		-	0.57
(F) Protection of Habitation due to blasting and other allied mining operation		9.00	3.50
Grand Total(A+B+C+D+E+F)		17.19	9.41

Organization Structure



S. No.	Designation	Proposed responsibility
1	Top Management (Director / Proprietor)	Overall, in-charge of operation of environment management facilities; Ensuring legal compliance by properly undertaking activities as laid down by various regulatory agencies from time to time and interacting with the same.
2	Manager – Environnent Health & Safety	• Interaction with Environmental Consultant. • Scheduling regular health check-up of the employee. • Submission of Monitoring Report as per Schedule • Environment Budget and sanctions.
4	Mine Manager	• Execution of Greenbelt development, Environmental Monitoring execution activities near site as per CSR and working procedure framed out by EHS officer. • Drilling and blasting supervision. • Supervision of Slope stability and mining operations
3	Assistant Manager – Environnent	• Implementation of EMP • Allotment of daily job • Field visit • Liaison with MOEF&CC/SPCB

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5

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5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or

maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

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Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

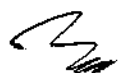
Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container



- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.



- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.



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- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Tepsa Stone Deposit of M/s Siddhartha Construction (Partner : Shri Anuj Kumar & Others), Mouza : Tepsa, Thana : Ichak, Thana no. : 39, Distt. : Hazaribagh, Jharkhand (0.712 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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16. Karma Stone Deposit of Partners : (i) Shri Ramchandra Rana (ii) Shri Rameshwar Pandit (iii) Shri Dwarika Das, Mouza : Karma, Thana : Chouparan, Thana no. : 289, Distt. : Hazaribagh, Jharkhand (1.091 Ha).

(Proposal no.: SIA/JH/MIN/ 549971 /2025)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Boulder Stone:25033 Cum Per Annum /67588 Tonnes Per Annum.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	: Karma Stone Deposit
2	Lessee:	: Partner- Shri Rameshwar Pandit
3	Lease Address	: Mauza- Karma, Thana No.-289, Thana-Chouparan, Anchal-Chouparan, District- Hazaribagh, Jharkhand
4	Lease Area	: Ha:1.091 ha Acres:2.695Acres
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: 54.0 Lakhs
7	EMP Budget	: Capital: 19.22Lakhs Recurring:11.05 Lakh / year
8	New or Expansion	: New Project
9	Mineable Reserves	: 216329 cum /584089 Tonnes
10	Mine Life	: 10 years Lease Period: 10 years
11	Man power	: 16
12	Water Requirement	: 12.9 KLD= 0.16 KLD (Drinking & Domestic Uses) + 8.24(Plantation) KLD + 4.5 KLD (Dust Suppression).
13	Water Source	: From Nearby villages by private water tankers.
14	DG Set / power	: 60 KVA
15	Crusher	: Not Present
16	Nearest Water Body	: Gori River, approx. 2.90 km towards East. Tilaiya Dam Reservoir, approx. 5.80 Km towards South.
17	Nearest Habitation	: Ramukarma, approx. 170 meters towards NW. (EMP Submitted)
18	Nearest Rail Station	: Pipradih Railway Station, approx. 8.20 km towards ESE direction.
19	Nearest Air Port	: Gaya Airport, approx. 60.40 km towards NW direction. Birsa Munda Airport, Ranchi, approx. 121.00 km towards South direction. (Source: Google earth & Aerial Distance)
20	Nearest Forest	: Protected Forest, approx. 0.40 Km towards SSE.

			Protected Forest, approx. 0.90 Km towards NNE. Protected Forest, approx. 4.60 Km towards North. Protected Forest, approx. 8.40 Km towards WSW.
21	Road & Highways	:	NH-20, Ranchi-Patna Road, approx. 7.15 km towards East direction.
22	Interstate Boundary	:	Jharkhand-Bihar State Border, approx. 13.10 km towards North direction.
23	Approach Road	:	Road towards Nawada and Nawadih, approx. 450 meters towards WNW.

CO-ORDINATES

1	Latitude		From 24°24' 49.976" N	To 24°24' 54.601"N
2	Longitude		From 85°24' 55.213"E	To 85°25' 00.470"E

LAND DETAILS

Khata no.	Plot no.
28	769 (P)
14	770

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (Loi) has been issued by District Mining Officer, Hazaribag vide memo no. 520/Khanan, dated 17.05.2025.
2	CO	:	The CO, Chauparan (Hazaribag) vide letter no. 282, dated 11.02.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II. During the appraisal it was seen from the KML that habitation exists within 500 meters from mining lease area. For which detailed Environmental Management Plan has been prepared and submitted.
3	DMO Cluster	:	DMO, Hazaribag vide memo no. 871/Khanan, dated 17.07.2025 certified that 02 Loi (5.68 Acre & 3.41 Acre) exists within 500 m radius from proposed project site and total area is 11.7914 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2425, dated 05.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Gautam Budha Wildlife Sanctuary.

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5	DFO Territorial	:	Divisional Forest Officer, Hazaribag West Forest Division vide letter no. 5761, dated 26.11.2024 & letter no. 5738, dated 21.11.2024 certified that the distance of notified / demarcated forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Sl. no. 04, Page no. 143).
7	Gram Sabha	:	Gram Sabha conducted on 28.11.2024.
8	Mine Plan Approval	:	Approved by DMO, Hazaribag vide Letter No. 1096/Mining, dated 01.09.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Method, Semi-Mechanized Mine, Wagon Drilling & Control Blasting will be deployed.
2	Quarry Area	:	0.873 ha.
3	Waste Generation	:	5 years-13252 cum waste
4	Stripping Ratio	:	1:0.04
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	427-422m AMSL
8	Ground Level Elevation	:	422m AMSL
9	Ultimate Working Depth	:	389m AMSL
10	Water Table	:	360 m AMSL
11	Topography of Mine	:	Undulating small hillocks
12	Explosive Requirement	:	21.26MT/Kg
13	Diesel/Fuel requirement	:	456 Litres/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Total Waste in Cum
1st	19461	52544	8504
2nd	20026	54070	1054

3rd	21803	58867	1148
4th	23337	63009	1228
5th	25033	67588	1318
Total	109660	296078	13252

Land Use

LAND USE PATTERN			
Land Utilization	Existing Land Use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.323	0.547	0.873 (0.181 ha area shall be backfilled, 0.352 ha area shall be left as water reservoir and 0.34 ha left as dead benches).
Waste Dump	NIL	0.056	Nil (waste dump to be removed and backfilled)
Road	0.016	0.004	0.000
Safety Zone Plantation	NIL	0.218	0.218
Total	0.339	0.825	1.091
Unused Area	0.752	0.266	0.000
Total Lease Area	1.091		

ENVIRONMENT MANAGEMENT

Green Belt Development

	Area in Ha	No. of Plantation	1 st Year Plantation	2 nd Year Plantation	3 rd Year Plantation	4 th Year Plantation	5 th Year Plantation
Area in safety Zone	0.218	545	545	Nursing & Protection			
Backfilled area	0.181	453	453				
Dead Benches	0.34	850	850				
Approach Road 450 m	-	900	900				
Total		2748	2748				

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10% of the total green belt proposed (274Plantation) will be dedicated to “Ek Ped Maa ke Nam”.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

MONITORING FREQUENCY

Particulars	Monitoring Frequencies	Location	Important Monitoring Parameters
Water Quality Monitoring	Twice in a year at two locations	One Surface Water and One Ground Water from the nearest source.	pH, SS, TDS, Iron, Hardness, Alkalinity Chlorides, Nitrates Sulphate & Fluorides
Ambient air monitoring	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	PM ₁₀ , PM _{2.5} , SO _x and NO _x
Noise Pollution	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	Level in dB(A) and dB(C)
Soil Sampling	Twice in a year at two locations	Nearby agriculture land located in downwind direction	pH, Conductivity, Sulphate, Nitrate, Phosphates, Alkalinity & texture.

Waste Management

In this applied lease area, the stone deposit is covered with 2m layer of intermixed gritty soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 13252 cum in-situ waste shall be generated during this plan period. The first year of waste i.e. 8504 cum shall be utilized for backfilling of excavated part of old quarry in safety zone with height of 8m which covers about 0.113ha. The waste generated during second to fifth year total 4748 cum in-situ waste out of which 2374cum (in-situ) waste shall be utilized for approach & haul road maintenance. The rest 50% i.e. 2374cum in-situ, 2967.50 cum loose & 2522.37cum compact waste shall be temporarily dumped on the western side of the applied lease area will cover about 0.056ha area are used for backfilling. Garland drain shall be provided along the OB dump. This drain would collect surface run off from dump body. Water collected in this drain would be stored in a sedimentation tank, the treated water shall be released for natural runoff.

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Quantity of HSD/ Fuel consumption per day of Karma Stone Deposit

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machine=1 Diesel consumption in one shift working. (i.e- 10 liters) $=1*8*10=80$ liters	80liters
2	Excavator	Number of Machine=1 Diesel consumption in one shift working. (i.e- 07litre/hr) $=1*8*7=56$ liters	56 liters
3	Tippers	Number of Tippers=01 Diesel consumption in one shift working. (i.e- 4ltr/hr.) $=01*10*4=40$	40 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr.) $=1*10*16=160$ liters	160 liters
5	Water Sprinkler	Number of Sprinkler=01 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr.) $=1*10*2=20$ liters.	20 liters
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			456

PROJECT COST:

S.No	Particular	Capital Cost (in Lakhs)	Recurring Cost (in Lakhs)
1	Lease Expense	16	0
2	Mining and Machinery	12	2
3	Cost of infrastructure	8	0.5
4	Employment	15	0
5	Miscellaneous	3	0
TOTAL		54	2.5

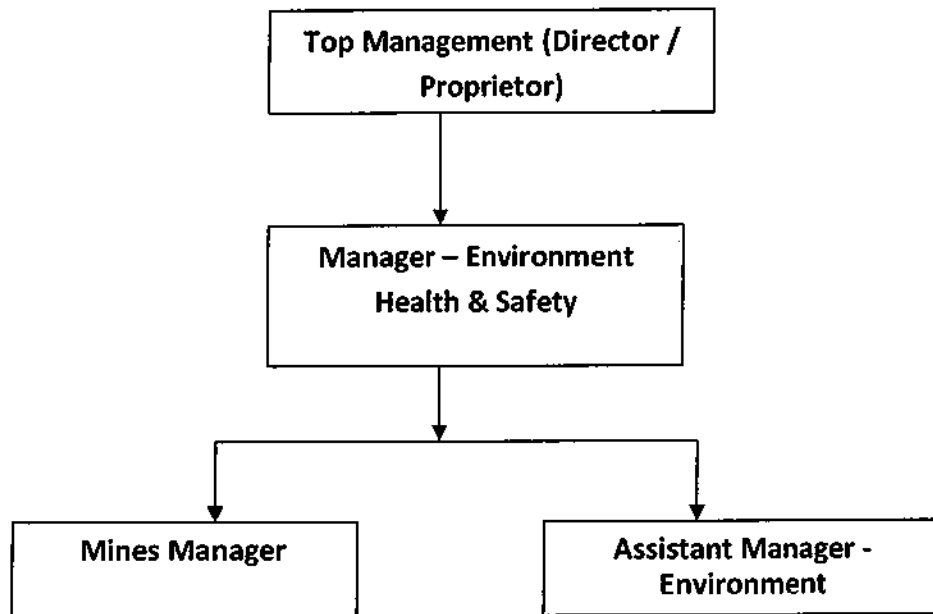
Environment Management Plan:

S.NO	Particulars	Annual Budget	
A)Site Facilities		Capital Cost (In Lakh)	Recurring cost (In Lakh)
1	a) Water sprinkling facility with solar pump / diesel pump	1.0	4.20

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	b) Cost of Water Rs. 700/Tanker/day (Capacity 7 KL x 2 No.) (700X 2 X 300)		
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x	0.75	0.15
3	Road Development and Maintenance (Road length approx. 450m, Width 5.0 mt.)	1.5	0.5
4	Plantation over the periphery of the project (2748 saplings). 2748*40= 1.10 Lakh Tree Guard: 2748*100=2.75 Lakhs	3.85	1.54
5	PUC certification of vehicles and maintenance	-	0.10
Sub Total(A)		7.1	6.49
B)Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with solar	1.0	0.10
2	Toilets 2 nos. (Rs 25000 x 2)	0.50	0.05
3	Occupational health checkup in a year for 16 workers (@twice/year) @200*2*16 and onsite first aid set-up	0.06	0.05
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (16 x 3000)	0.48	0.10
5	Vocational training on mining methods and safe work practices (@twice/year) @ 250 x 2 x 16)	-	0.08
Sub Total(B)		2.04	0.38
C)Emergency Rescue Plan			
1	Fire Extinguishers (1 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit	0.50	0.01
2	Safety signage and warning boards like sirens, red flags, cones etc.	0.50	0.05
Sub Total(C)		1.0	0.06
D)Solid Waste Management			
1	a) Bins 2 Nos. @ Rs. 1500 each	0.03	0.05
	b) Pit and Composting	0.05	
Sub Total(D)		0.08	0.05
E)Monitoring Program			
1	a) Ambient Air Quality	-	0.20
	b) Water Quality	-	0.20
	c) Noise Quality	-	0.07
	d) Soil Quality	-	0.10
Sub Total(E)		-	0.57
(F) Protection of Habitation due to blasting and other allied mining operation		9.00	3.50
Grand Total(A+B+C+D+E+F)		19.22	11.05

Organization Structure



S. No.	Designation	Proposed responsibility
1	Top Management (Director / Proprietor)	Overall, in-charge of operation of environment management facilities; Ensuring legal compliance by properly undertaking activities as laid down by various regulatory agencies from time to time and interacting with the same.
2	Manager – Environment Health & Safety	• Interaction with Environmental Consultant. • Scheduling regular health check-up of the employee. • Submission of Monitoring Report as per Schedule • Environment Budget and sanctions.
4	Mine Manager	• Execution of Greenbelt development, Environmental Monitoring execution activities near site as per CSR and working procedure framed out by EHS officer. • Drilling and blasting supervision. • Supervision of Slope stability and mining operations
3	Assistant Manager – Environment	• Implementation of EMP • Allotment of daily job • Field visit • Liaison with MOEF&CC/SPCB

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after

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settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25







Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement

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- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the

weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large

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quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.

- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Karma Stone Deposit of Partners : (i) Shri Ramchandra Rana (ii) Shri Rameshwar Pandit (iii) Shri Dwarika Das, Mouza : Karma, Thana : Chouparan, Thana no. : 289, Distt. : Hazaribagh, Jharkhand (1.091 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. The mine will come in operation only after obtaining permission from DGMS for controlled and delayed blasting.
- II. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be

maintained and submitted with 6 monthly compliance report.

- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

17. Bhelwara Stone Deposit of M/s Ganpati Stone Minerals, Mouza : Bhelwara, Thana & Anchal : Vishnugarh, Thana no. : 185, Distt. : Hazaribagh, Jharkhand (1.634 Ha).

(Proposal no.: SIA/JH/MIN/ 545312 /2025)

Name of the consultant : Rian Enviro Private Limited, Patna, Bihar.

This is a new project which has been taken for appraisal on 12.09.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

ToR Application for: Boulder Stone:64519 Cum Per Annum /174202Tonnes Per Annum.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	: Bhelwara Stone Deposit
2	Lessee:	: M/S Ganpati Stone Minerals Partner- Shri Sakal Prasad Mehta
3	Lease Address	: Mauza- Bhelwara, Thana No.-185,Anchal- Vishnugarh, District- Hazaribagh, Jharkhand
4	Lease Area	: Ha:1.634 ha Acres:4.04Acres
5	Cluster Details	: Yes, the total cluster area of this project is (14.47 acres /5.858 hectares) which is more than 5.0 Ha.
6	Type of Land	: Non-Forest – Rayati Land
7	Project Cost	: 50.0 Lakhs
8	EMP Budget	: Capital: 9.02 Lakhs Recurring: 6.06 Lakh / year
9	New or Expansion	: New Project
10	Mineable Reserves	: 304040 Cum/820908Tonnes
11	Mine Life	: 05 years(4 Years 11 Months) Lease Period: 4 Years 11 Months
12	Man power	: 17
13	Water Requirement	: 9.83 KLD= 0.17 KLD (Drinking & Domestic Uses) + 6.66 (Plantation) KLD + 3.0 KLD (Dust Suppression).

14	Water Source	:	From Nearby villages by private water tankers (Nala at 68 m).
15	DG Set / power	:	60 KVA
16	Crusher	:	Not Present
17	Nearest Water Body	:	Siwane Nadi, approx. 2.4 Km towards South.
18	Nearest Habitation	:	Murumatu, approx. 510 m towards NW Bhelwara, approx. 2.9 Km towards ENE Holang, approx. 1.3 Km towards NNE
19	Nearest Rail Station	:	Hazaribagh Railway Station, approx. 30.6 Km towards WSW.
20	Nearest Air Port	:	Birsa Munda Airport, Ranchi, approx. 83.4 Km towards SW.
21	Nearest Forest	:	Tati Jhariya PF, approx. 1.2 Km towards WSW Bhelwara PF, approx. 3.2 Km towards ENE Murgaon PF, approx. 6.8 Km towards East Golgo PF, approx. 5.9 Km towards NE Kolhu PF, approx. 6.3 Km towards NE Kharna PF, approx. 9.03 Km towards NE Godhya PF, approx. 4.9 Km towards WNW Ghughuliya PF, approx. 5.08 Km towards NW Jharpo PF, approx. 9.3Km towards NW Unnamed (PF), Approx. 9.2 Km towards NNW Unnamed (RF), Approx. 9.06 Km towards NNE
22	Road & Highways	:	NH 522 (Hazaribagh- Bagodar Marg), Approx. 1.8 Km towards NNW
23	Interstate Boundary	:	Nil
24	Approach Road	:	Road towards Murumatu village, approx. 300 m towards NE direction.
25	Monitoring Date	:	1 st March,2025 to 31 st May,2025

CO-ORDINATES

1	Latitude	From 24° 24' 55.656"N	To 24° 25' 0.000" N
2	Longitude	From 85° 25' 16.526"E	To 85° 25' 21.737" E

LAND DETAILS

Khata no.	Plot no.
68	290 (P) & 293
73	292 (P) & 296
58	297 (P)

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STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Hazaribag vide letter no. 1489/Khanan, dated 23.12.2024.
2	CO	:	The CO, Vishnugarh vide letter no. 916, dated 19.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II. During the appraisal it was seen from the KML that Seasonal Nala at a distance of 68 meters from mining lease area.
3	DMO Cluster	:	DMO, Hazaribag vide memo no. 887/Khanan, dated 17.07.2025 certified that 02 other mining lease area (5.87 Acre & 4.56 Acre) exists within 500 meters radius from proposed project site and total area is 14.47 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1635, dated 02.09.2025 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag East Forest Division vide letter no. 2005, dated 16.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Page no. 145, Sl. no. 23).
7	Gram Sabha	:	Gram Sabha conducted on 25.08.2024.
8	Mine Plan Approval	:	Approved by DMO, Hazaribag vide Letter No. 888/Mining, dated 17.07.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Method, Semi-Mechanized Mine, Wagon Drilling & Control Blasting will be deployed.
2	Quarry Area	:	1.119 ha.
3	Waste Generation	:	5 years-49628 cum waste
4	Stripping Ratio	:	1:0.06
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	530-519m AMSL

8	Ground Level Elevation		519m AMSL
9	Ultimate Working Depth	:	494 m AMSL
10	Water Table	:	480 m AMSL
11	Topography of Mine	:	Undulating small hillocks
12	Explosive Requirement	:	21.26MT/Kg
13	Diesel/Fuel requirement	:	496Litres/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Total Waste in Cum
1st	57747	155916	22729
2nd	58781	158709	4282
3rd	61321	165566	3227
4th	61627	166392	14294
5th	64519	174202	5096
Total	303994	820785	49628

Land Use

LAND USE PATTERN			
Pattern of Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	1.119	1.119 (0.087 ha area shall be backfilled, 0.612 ha area shall be left as water reservoir and 0.420 ha left as dead benches).
Waste Dump	Nil	Nil (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Road	Nil	0.00	0.00
Safety Zone Plantation	Nil	0.515	0.515
Total	0.00	1.634	1.634
Unused Area	1.634	0.0	0.0
Total Lease Area	1.634	1.634	1.634


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 A

ENVIRONMENT MANAGEMENT
Green Belt Development

	Area in Ha	No. of Plantation	1 st Year Plantation	2 nd Year Plantation	3 rd Year Plantation	4 th Year Plantation	5 th Year Plantation
Area in safety Zone	0.515	824	824	Nursing& Protection			
Backfilled area	0.087	139	139				
Dead Benches	0.420	672	672				
Approach Road 294m	-	588	588				
	Total	2223	2223				

10% of the total green belt proposed (222Plantation) will be dedicated to “Ek Ped Maa ke Nam”.

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

MONITORING LOCATION (1ST OF MARCH 2025 to 31ST OF MAY 2025)

AIR MONITORING LOCATION MAP			
SL. No.	Location	DISTANCE AND DIRECTION	Co-ordinate
AAQ1	Project Site	-	24° 0'47.98"N 85°38'23.52"E
AAQ2	Jharia	1.93 km towards NW	24° 1'29.56"N 85°37'25.92"E
AAQ3	Hanuman Temple, Holang	0.98 km towards North	24° 1'24.10"N 85°38'17.80"E
AAQ4	Titijharia Block office	1.36 km towards	24° 1'1.45"N

		WNW	85°37'32.22"E
AAQ5	Palmo	3.60 km towards SSE	23°59'6.84"N 85°39'31.72"E
AAQ6	Bhelwara	1.28 km towards SE	24° 0'21.96"N 85°39'1.58"E
AAQ7	Temple Behradih	1.96 km towards ENE	24° 0'54.87"N 85°39'34.59"E
AAQ8	School, Masurutari	5.36 km towards ESE	23°59'59.67"N 85°41'28.03"E
NOISE MONITORING LOCATION MAP			
NQ1	Project Site	-	24° 0'47.98"N 85°38'23.52"E
NQ2	Jharia	1.93 km towards NW	24° 1'29.56"N 85°37'25.92"E
NQ3	Hanuman Temple, Holang	0.98 km towards North	24° 1'24.10"N 85°38'17.80"E
NQ4	Titijharia Block office	1.36 km towards WNW	24° 1'1.45"N 85°37'32.22"E
NQ5	Palmo	3.60 km towards SSE	23°59'6.84"N 85°39'31.72"E
NQ6	Bhelwara	1.28 km towards SE	24° 0'21.96"N 85°39'1.58"E
NQ7	Temple Behradih	1.96 km towards ENE	24° 0'54.87"N 85°39'34.59"E
NQ8	School, Masurutari	5.36 km towards ESE	23°59'59.67"N 85°41'28.03"E
GROUND WATER MONITORING LOCATION MAP			
GW1	Murumatu	0.48 km towards WNW	24° 0'54.89"N 85°38'2.79"E
GW2	Jharia	1.93 km towards NW	24° 1'29.56"N 85°37'25.92"E
GW3	Hanuman Temple, Holang	0.98 km towards North	24° 1'24.10"N 85°38'17.80"E
GW4	Titijharia Block office	1.36 km towards WNW	24° 1'1.45"N 85°37'32.22"E
GW5	Palmo	3.60 km towards SSE	23°59'6.84"N 85°39'31.72"E
GW6	Bhelwara	1.28 km towards SE	24° 0'21.96"N 85°39'1.58"E
GW7	Temple Behradih	1.96 km towards ENE	24° 0'54.87"N 85°39'34.59"E
GW8	School, Masurutari	5.36 km towards ESE	23°59'59.67"N 85°41'28.03"E

SOIL MONITORING LOCATION MAP			
SQ1	Project Site	-	24° 0'47.98"N 85°38'23.52"E
SQ2	Jharia	1.93 km towards NW	24° 1'29.56"N 85°37'25.92"E
SQ3	Hanuman Temple, Holang	0.98 km towards North	24° 1'24.10"N 85°38'17.80"E
SQ4	Titijharia Block office	1.36 km towards WNW	24° 1'1.45"N 85°37'32.22"E
SQ5	Palmo	3.60 km towards SSE	23°59'6.84"N 85°39'31.72"E
SQ6	Bhelwara	1.28 km towards SE	24° 0'21.96"N 85°39'1.58"E
SQ7	Temple Behradih	1.96 km towards ENE	24° 0'54.87"N 85°39'34.59"E
SQ8	School, Masurutari	5.36 km towards ESE	23°59'59.67"N 85°41'28.03"E
SURFACE WATER MONITORING LOCATION MAP			
SW1	Nala	Near Project site, approx. 20 meters	24° 0'52.44"N 85°38'20.75"E
SW2	Pond near Jharia	1.40 km towards NW	24° 1'25.44"N 85°37'47.54"E
SW3	Siwane River (Up Stream)	2.37 km towards SSE	23°59'34.44"N 85°38'54.20"E
SW4	Siwane River (Down - Stream)	2.44 km towards SE	23°59'38.47"N 85°39'8.52"E
SW5	Pond near Murki	3.39 km towards SW	23°59'17.88"N 85°37'11.99"E

Waste Management

In this applied lease area, the stone deposit is covered with 2m layer of intermixed gritty soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 49628 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 24814 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 24814cum insitu 31017.38 cum loose & 26364.77cum compact waste shall be temporarily dumped in southern side of the applied lease area, up to third year & during the fourth & fifth year the generated waste and waste materials of past dumping shall be removed and used for backfilling of exhausted part of the quarry in north western part of the area and it will cover 0.087ha area.

Quantity of HSD/ Fuel consumption per day of Bhelwara Stone Deposit

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machine=1 Diesel consumption in one shift working. (i.e- 10 liters) $=1*8*10=80$ liters	80liters
2	Excavator	Number of Machine=1 Diesel consumption in one shift working. (i.e- 07litre/hr) $=1*8*7=56$ liters	56 liters
3	Tippers	Number of Tippers=02 Diesel consumption in one shift working. (i.e- 4ltr/hr.) $=01*10*4=80$	80 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr.) $=1*10*16=160$ liters	160 liters
5	Water Sprinkler	Number of Sprinkler=01 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr.) $=1*10*2=20$ liters.	20 liters
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			496

PROJECT COST:

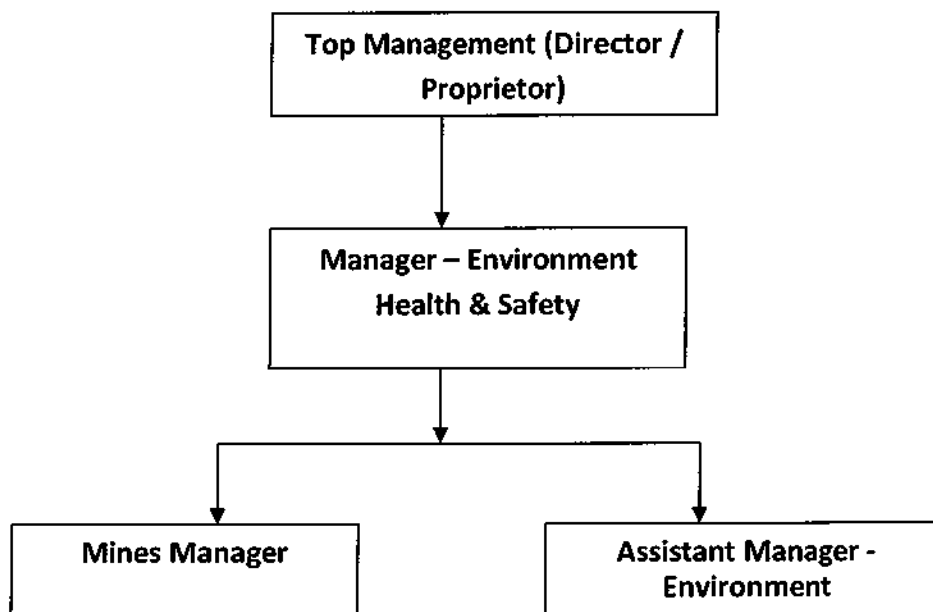
S.No	Particular	Capital Cost (in Lakhs)	Recurring Cost (in Lakhs)
1	Lease Expense	14	0
2	Mining and Machinery	10	2
3	Cost of infrastructure	8	0.5
4	Employment	16	0
5	Miscllaneous	2	0
TOTAL		50	2.5

Environment Management Plan:

S.NO	Particulars	Budget Provisions (Lakh)	
A)Site Facilities		Capital Cost (In Lakh)	Recurring cost (In Lakh)
1	a) Water sprinkling facility with solar pump / diesel pump b) Cost of Water Rs. 500/Tanker/day (Capacity 5KL x 2 No.) (500X 2 X 300)	1.0	3.00
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x 2No.)	0.75	0.15
3	Road Development and Maintenance (Road length approx.300m, Width 5.0 mt.)	1.0	0.5
4	Plantation over the periphery of the project (2223 saplings). 2223*40= 0.89 Lakh Tree Guard: 2223*100=2.22 Lakhs	3.11	1.24
5	PUC certification of vehicles and maintenance	-	0.10
Sub Total(A)		5.86	4.99
B)Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with solar light	1.0	0.10
2	Toilets 2 nos. (Rs 25000 x 2)	0.50	0.05
3	Occupational health checkup in a year for 17 workers (@twice/year) @200*2*17 and onsite first aid set-up	0.07	0.05
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (17 x 3000)	0.51	0.10
5	Vocational training on mining methods and safe work practices (@twice/year)@ 250 x 2 x 17)	-	0.09
Sub Total(B)		2.08	0.39
C)Emergency Rescue Plan			
1	Fire Extinguishers (1 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit	0.50	0.01
2	Safety signage and warning boards like sirens, red flags, cones etc.	0.50	0.05
Sub Total(C)		1.0	0.06
D)Solid Waste Management			
1	a) Bins 2 Nos. @ Rs. 1500 each	0.03	0.05
	b) Pit and Composting	0.05	
Sub Total(D)		0.08	0.05
E)Monitoring Program			
	a) Ambient Air Quality	-	0.20
	b) Water Quality	-	0.20

1	c) Noise Quality	-	0.07
	d) Soil Quality	-	0.10
Sub Total(E)		-	0.57
Grand Total(A+B+C+D+E+F)		9.02	6.06

Organization Structure



S. No.	Designation	Proposed responsibility
1	Top Management (Director / Proprietor)	Overall, in-charge of operation of environment management facilities; Ensuring legal compliance by properly undertaking activities as laid down by various regulatory agencies from time to time and interacting with the same.
2	Manager – Environment Health & Safety	• Interaction with Environmental Consultant. • Scheduling regular health check-up of the employee. • Submission of Monitoring Report as per Schedule • Environment Budget and sanctions.
4	Mine Manager	• Execution of Greenbelt development, Environmental Monitoring execution activities near site as per CSR and working procedure framed out by EHS officer. • Drilling and blasting supervision. • Supervision of Slope stability and mining operations
3	Assistant Manager – Environment	• Implementation of EMP • Allotment of daily job • Field visit • Liaison with MOEF&CC/SPCB

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, There by requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4

2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling

- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 09, 10, 11, 12 & 13.09.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. The detailed EMP is to be prepared for the Seasonal Nala existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

Day 5 : 13th, 2025 [Saturday]

1. Regarding EC applicability of the Bokaro Airport of M/s Bokaro Steel Plant (SAIL), Bokaro.

A mail sent by Mr. D.K. Saxena, CGM (Environment, Conservation & Sustainability), SAIL, Bokaro Steel Plant to SEIAA and DFO, Ranchi –cum- Member Secretary, SEAC seeking clarification on the applicability of requirement of EC on conversion of the Captive Bokaro Airport to Commercial (Public use) Airport.

It is to be noted that clarification in this regard has already been discussed in the 115th meeting of SEAC held on 23rd to 27th July, 2024 and further deliberated on the same issue in the 115th meeting of SEIAA held on 06th & 07th August, 2024. The outcome of deliberations and discussions of the SEIAA and SEAC meetings were communicated to concerned authorities.

The SEAC is of the opinion that no further deliberation in the matter is **warranted** in the matter as the details were very explicitly communicated by SEIAA.

Further, Mr. D.K. Saxena had personally come during SEAC meeting and he was again explained to his satisfaction about the applicability of requirement of EC on conversion of the Captive Bokaro Airport to Commercial (Public use) Airport.

The SEIAA may communicate the same to Mr. D.K. Saxena, CGM (Environment, Conservation & Sustainability), SAIL, Bokaro Steel Plant.

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The meeting concluded with thanks to all present.

Absent

Ashok Kumar Dubey, IFS (Retd.)
Member

Ajay Govind Bhatt
13/03/2025

Dr. Ajay Govind Bhatt
Member

Niranjan Lal Agarwalla

Niranjan Lal Agarwalla
Member

Raju Kumar

Dr. Raju Kumar
Member

~~*Srikant Verma*~~
~~*13/09/2025*~~
Srikant Verma, IFS
Member Secretary

Ashok Kumar Singh
13/09/2025
Ashok Kumar Singh, IFS (Retd.)
Chairman

I. Statutory compliance

- i. This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- ii. In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpadvs union of India and ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".
- iii. The Project proponent complies with all the statutory requirements and judgement of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- iv. The Hon'ble Supreme Court vide order dated 08.01.2020 in W.P. (Civil) No.114/2014 in the matter of Common Cause vs. Union of India has directed that the area which has been mined should be restored so that grass and other vegetation including trees can grow in the mining area for the benefit of animals.

"The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- v. The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgement of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- vi. This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.
- vii. This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.
- viii. Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.

- ix. The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- x. The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- xi. The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-11013/57/2014-IAJI (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".
- xii. The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- xiii. A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- xiv. State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- xv. The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change ([www. Environment clearance.nic.in](http://www.Environmentclearance.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEF& CC Regional Office for compliance and record.
- xvi. The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

- i. The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical

parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2; CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCUI, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

- ii. Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance: Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

- i. In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- ii. Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- iii. Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be

submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

- iv. The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.
- v. Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IAJI (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
- vi. Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEF&CC annually.
- vii. Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.

- viii. The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

IV. Noise and vibration monitoring and prevention

- i. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- ii. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
- iii. The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining Plan

- i. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
- ii. The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.

- iii. The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office.

VI. Land reclamation

- i. The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- ii. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- iii. The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- iv. The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- v. The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.
- vi. Catch drains, settling tanks and ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.

- vii. Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- viii. The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

- i. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- ii. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

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VIII. Green Belt

- i. The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- ii. The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
- iii. The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- iv. The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation, if any found or reported by the competent authority. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- v. If any Wild Life Conservation Plan is prepared as per above clause no. iv, it shall be implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

- i. The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall

be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.

- ii. The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
- iii. The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).
- iv. The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck

Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.

- v. The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- vi. Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- vii. The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

X. Corporate Environment Responsibility (CER)

- i. The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
- ii. Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.

XI. Miscellaneous

- i. The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- ii. The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

- iii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF& CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.
- iv. A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
- v. The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
- vi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- vii. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- viii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- ix. The Environmental Clearance accorded shall be valid for the period of lease of the mine. The PP shall not increase production rate and alter lease area during the validity of Environmental Clearance
- x. Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.

TERMS OF REFERENCE (TOR) FOR OPEN CAST COAL MINING

The TORs prescribed for undertaking detailed EIA study are as follows:

1. The EIA Report shall be prepared for MTPA rated capacity in an ML / project area of ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.
2. An EIA-EMP Report would be prepared for MTPA rated capacity to cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for MTPA of coal production based on approved project/Mining Plan for MTPA . Baseline data collection can be for any season except monsoon.
3. A map specifying locations of the State, District and Project location should be provided.
4. A Study area map of the core zone and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given.
5. Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note on the land use.
6. Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
7. A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
8. A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification thereof in terms of construction of

embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.

9. In case of any proposed diversion of nallah/canal/river, the proposed route of diversion /modification of drainage and their realignment, construction of embankment etc. should also be shown on the map as per the approval of Irrigation and Flood Control Department of the concerned state.
10. Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown in the map.
11. Break up of lease/project area as per different land uses and their stage of acquisition should be provided.

Land use details for opencast project should be given as per the following table :

S. N.	Land use	Within ML area	Outside ML area	Total
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			

12. Break-up of lease/project area as per mining operations should be provided.
13. Impact of changes in the land use due to the project, if much of the land being acquired is predominantly agricultural land/forestland/grazing land.
14. One-season (non-monsoon) primary baseline data on environmental quality - air (PM10, PM2.5, SOx, NOx and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
15. Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources should be provided. The number and location of the stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Values should be provided based on desirable limits.
16. Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora fauna and, or if the area is occasionally visited or used as a habitat by Schedule-I fauna, or if the project falls within 15 km of

an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan should be prepared and submitted with EIA-EMP Report; and comments from the CWLW of the State Govt. should also be obtained and furnished.

17. Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included.
18. Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
19. Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
20. Detailed water balance along with flow chart should be provided. The break-up of water requirement for the various mine operations should be given separately.
21. Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users should be given.
22. Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
23. Impact of blasting, noise and vibrations should be given.
24. Impacts of mining on the AAQ and predictions based on modeling using the ISCST-3 (Revised) or latest model should be provided.
25. Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
26. Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP / Silo entirely wagons and into trucks / tippers.
27. Details of waste OB and topsoil generated as per the approved calendar programme, and their management shown in figures as well explanatory notes tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use should be given. OB dump heights and terracing based on slope stability studies with a max of 28° angle as the ultimate slope should be given. Sections of final dumps (both longitudinal and cross section) with relation to the adjacent area should be shown.

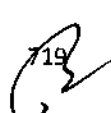
28. Efforts be made for maximizing progressive internal dumping of O.B., sequential mining , external dump on coal bearing area and later rehandling into the mine void.-- to reduce land degradation.
29. Impact of change in land use from mining operations and whether the land can be restored to agriculture use post mining.
30. Progressive Green belt and Ecological restoration /afforestation plan (both in text, figures and in the tabular form as per the format of MOEF&CC given below) and selection of species (native) based on original survey/land use should be given.
31. Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the status of pre- mining should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of rehandling (wherever applicable) and backfilling and progressive mine closure and reclamation should be detailed.

Table 3 : Post-Mining land use pattern of ML / Project area (ha)

Land use during mining	Land use (ha)				
	Plantation	Water body	Public use	Undisturbed	Total
External OB dump					
Top soil dump					
Excavation					
Roads					
Built up area					
Green belt					
Undisturbed area					
	Total				

32. Flow chart of water balance should be provided. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. should be provided. Details of STP in colony and ETP in mine should be given. Recycling of water to the max. possible extent should be accorded ?.
33. Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower in the mine should be given.
34. Risk Assessment and Disaster Preparedness and Management Plan should be provided.







35. Integration of the Environmental Management Plan with measures for minimizing use of natural resources - water, land, energy, etc. should be carried out.
36. Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
37. Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.
38. CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
39. Corporate Environment Responsibility:
 - a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
 - d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
40. Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
41. In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
42. Status of any litigations/ court cases filed/pending on the project should be provided.
43. Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
44. Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

Details on the Forest Clearance should be given as per the format given :

Total ML / Project area (ha)	Total forest land (ha)	Date of FC	Extent of forest land	Balance area for which FC is yet to be obtained	Status of application for diversion of forest land

45. Besides the above, the below mentioned general points should also be followed:-
- A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
 - All documents may be properly referenced with index and continuous page numbering.
 - Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
 - Where the documents provided are in a language other than English, an English translation should be provided.
 - The Questionnaire for environmental appraisal of mining projects as prescribed by the Ministry shall also be filled and submitted.
 - Approved mine plan along with copy of the approval letter for the proposed capacity should also be submitted.
 - While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF vide O.M. No. J-11013 /41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
 - Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the F.R for securing the TOR) should be brought to the attention of SEIAA, Jharkhand with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH process again with the revised documentation.

The EIA report should also include

- surface plan of the area indicating Contours of main topographic features, drainage and mining area.
- geological maps and sections and
- sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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After preparing the draft EIA (as per the generic structure prescribed in Appendix- III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

46. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

TERMS OF REFERENCE (TOR) FOR UG COAL MINING

[GREEN FIELD & BROWN FIELD]

- i. An EIA-EMP Report shall be prepared for.....MTPA peak rated capacity in a mining lease (ML) area of ha based on the generic structure specified in Appendix-III of the EIA Notification, 2006.
- ii. The cover page of the EIA report shall consists of project title with location, applicable schedule of the EIA Notification, 2006, ToR letter No. with date, study period along with EIA consultant & laboratory details with reference of QCI/NABET/NABL accreditation certificate.

Introduction about the project:

- i. Details regarding project capacity (peak rated capacity in MTPA) and mining lease area (ha), details regarding project proponent and project location (including coalfield / coal block & geographical location), significance/need of the project and coal linkage.
- ii. Details of mine plan and mine closure plan approval from Competent Authority should be furnished for green field and expansion projects. Reference of the Vesting Order should also be provided.
- iii. Details of the chronology of past EC regarding the project and its implementation status (in case of expansion proposals) shall be provided

Project Details and Description

- i. Details w.r.t location of the project - Coordinates w.r.t the mining lease boundary (including kml in polygon format) to be provided and submitted as location plan. A toposheet depicting the core zone (mine infrastructural area) and buffer zone (10 kms radius from periphery of the core zone) on 1:25,000 scale. (including all eco-sensitive areas and environmentally sensitive places)
- ii. Details of sensitive environmental receptors (habitation / school / river or water body / forest / areas of archaeological significance, etc.) within 10 kms from the periphery of the core zone shall be provided. Details w.r.t need for diversion of water body / road / railway / transmission lines to be indicated.
- iii. Details of mineral reserves, geological status of the mining lease area and the

seams to be worked, ultimate working depth, gassiness of seams to be worked and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved peak rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and section should be included.

- iv. Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts on air quality, noise & vibration on account of mineral transportation, coal handling & storage/stockyard, etc. should be provided. Details w.r.t manpower engaged in the project shall also be included.
- v. Submission of sample test analysis of characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, sulphur and heavy metals including levels of Hg, As, Pb and Cr.
- vi. Details w.r.t utilities required for the project including power, fuel, water supply, including source of the utilities.
- vii. Details w.r.t infrastructural facilities planned as a part of the project including incline, ventilation shafts, CHP, ETP, Stockyard, township/colony, magazine, etc.
- viii. Project proponent should clearly show the transport route & details of transportation route (viz. Type of road, width of road, Pavement Condition Index, V/C of road etc.) of the mineral and protection and mitigative measures to be adopted while transporting the mineral. The coal or lignite evacuation facility should be through conveyor or railway or any environmentally friendly transport other than road transport from mine sites to the railway siding for projects with PRC more than 2 MTPA, as per new Guidelines for preparation of Mining Plan and Mine Closure Plan from MoC dated 31.01.2025. Also, preference to be given to eliminate road transport by adopting environment friendly transport of coal evacuation and opt for mechanized loading for projects with peak rated capacity even upto 2 MTPA.
- ix. A detailed site plan of the mine showing the proposed break-up of the land for mining operations such as the mine entries / incline, UG seams and panels, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area-if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification thereof in terms of construction of embankments/bunds, proposed diversion/re-channeling of the water courses, etc., approach roads, etc. should be indicated.
- x. Project proponent shall submit the drone video & geo-tagged photographs of mine lease area to be mined, including infrastructural area and proposed transportation route.
- xi. It must be endeavored to locate the mine inclines and ventilation shafts at least 100 m from habitations. In case such 100 m buffer is not possible, justification for the same shall be provided. Project proponent should ensure that no forestland is diverted to the extent feasible for setting up of the mine infrastructure facilities.
- xii. Original land use (agricultural land/ forest land (if applicable) /grazing land/waste land/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the mining lease area, acquired for mining operations should be analyzed. Extent of area under surface rights and mining rights should be specified. A map depicting the same shall also

be submitted.

Pre-Mining Land use

Sl. No.	ML/Project Land-use	Area under Surface Rights only (ha)	Area under Mining Rights (ha)	Area under Both / All Rights (ha)
1.	Agricultural Land			
2.	Forest Land			
3.	Grazing Land			
4.	Settlements			
5.	Water bodies			
5.	Others(specify)			
	TOTAL			

Break-up of Area under Surface Rights only

Sl. No.	Details	Area (ha) under Surface Rights only
1.	Buildings	
2.	Infrastructure	
3.	Roads	
4.	Water bodies	
5.	Others(specify)	
	Total	

Land Use during Mining Phase

Sl. No.	Details	Area under Surface Rights only (ha)			Area under Mining Rights [beneath surface] (ha)			Area under Both /All Rights (ha)		
		Forest Land	Non-forest land	Total	Forest Land	Non-forest land	Total	Forest Land	Non-forest land	Total
1	UG Extraction / Working area (beneath surface)									
2	Industrial Infrastructure (Mine entry / incline, stockyard / siding /									

	magazine, etc.)									
3	Other infrastructure (office buildings, utilities, treatment plants, colony etc.)									
4	Roads									
5	Greenbelt									
6	Water body									
7	Undisturbed/ vacant area / safety zone									
	TOTAL									

In case of expansion proposals, the above table must be provided for

- (1) Present land use as per existing EC and
- (2) Proposed land use in terms of expansion proposal

Land Use Status - Post Mining Phase

Sl. No.	Details	Plantation	Water Body	Public Infrastructure	Un-disturbed areas	Subsided Area	Total
1.	UG Extraction / Working area (beneath surface)						
2.	Industrial Infrastructure (Mine entry / incline,						
3.	stockyard / siding / magazine, etc.)						
4.	Other infrastructure (office buildings						

	utilities, treatment plants, colony etc.)						
5.	Roads						
6.	Green belt						
7.	Water body						
8.	Undisturbed / vacant area / safety zone						
9.	Total						

In case of expansion proposals, the above table must be provided for

- (1) Post mining land use as per existing EC and
- (2) Proposed post mining land use in terms of expansion proposal

- xiii. A list of major industries within study area (10 km radius from the periphery of the core zone) with name, products manufactured and distance from core zone and the location of the industries shall be depicted in the study area map.

Baseline Data Generation

- i. A study area map of the core zone (mine infrastructure area) and 10 kms area (1:50,000 scale), from the periphery of core zone, clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nallahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources shall be prepared.
- ii. In case of ecologically sensitive areas such as ESZ/ESA/National Park/Wildlife Sanctuary/Biosphere Reserve/Tiger Reserve/Elephant Reserve/Tiger Corridor/ Elephant Corridor are found to be within 10 kms from the boundary of the mining lease, the nearest distance from such sites should be duly certified by Chief Wildlife Warden (CWW) and the same shall be included in the EIA/EMP report.
- iii. The environmental baseline data collection shall be of three months' period and can be for any season except monsoon season, as per the below table:

Attributes	Sampling, Frequency and Remarks
A. Air Environment	
Micro-Meteorological • Wind speed (Hourly) • Wind direction • Dry bulb temperature	Minimum 1 site in the core zone Hourly continuous data shall be recorded The sampling shall be as per:

• Wet bulb temperature • Relative humidity • Rainfall • Solar radiation • Cloud cover	• IS 5182 Part 1-20 • Site specific primary data is essential • Secondary data from IMD, CPCB guidelines to be considered. Project proponent has to plot the wind rose diagram using the typical meteorological year (TMY) data for the period considered for the study.
Pollutants Core Zone: 4 parameters as per Coal Mines, GSR 742 (E) dated 25.09.2000 Buffer zone: 12 parameters as per NAAQS, 2009	Collection of one season (90 days) AAQ data (except in monsoon season) To be monitored at 10 locations (2 locations within the core zone and 8 locations in the buffer zone) Monitoring stations in the core zone as well as buffer zone should be based on pre-dominant wind direction, habitations and terrain features. The direction and distance of monitoring stations with respect to project location should be clearly specified with geo-coordinates. The monitoring stations should cover upwind, downwind, cross wind directions, human settlements and sensitive areas. Sampling and report preparation should be as per: • National Ambient Air Quality Standards, CPCB Notification and Standards for Coal Mines, GSR 742 (E) dated 25.09.2000. • Sampling as per CPCB guidelines • Min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report. • Summary of the air quality along with predicted values of air pollutants should be provided in the EIA Report. • NABL accredited laboratory
B. Noise	
Noise levels	To be monitored at 6 locations (2 locations within the core zone and 4 locations in the buffer zone) Noise levels at outer limits of the core zone during daytime and

	night time and noise levels within 1 to 3 kms from the core zone & coal transportation route especially at habitation should be monitored. The monitoring locations for sampling shall be selected as per the sources and magnitude of noise pollution. Sampling and report preparation as per:
	- As per CPCB norms and Standards for Coal Mines, GSR 742 (E) dtd 25.09.2000. - NABL accredited laboratory Summary of the noise level should be provided in the EIA Report.
C. Water	
For Surface Water - Arsenic - BOD - Cadmium - Chlorides - Copper - Dissolved Oxygen - Fluoride - Hexavalent Chromium, - Iron - Lead - Nitrate - pH value - Phenolic compounds - Selenium - Sulphate - Total Dissolved Solids - Total Suspended Solids - Zinc Any other relevant parameters	Upstream and downstream sampling of all the relevant surface water bodies (minimum 6 locations) in the core and buffer zone shall be carried out. Samples for water quality should be collected and analysed as per: - Designated best use water quality criteria, CPCB - NABL accredited laboratory - Standard methodology for collection of surface water (BIS standards)
For Ground Water Relevant parameters as per BIS: 10500 (latest edition)	Ground water monitoring data should be collected at minimum of 6 locations (from existing wells /tube wells) from the core and buffer zone shall be included. Samples for water quality should be collected and analysed as per: - NABL accredited laboratory - Standard methodology for collection of ground water (BIS standards) - Summary of surface and ground water quality should be provided in the EIA Report.

D. Soil Environment	
Soil • Texture • pH • Electrical conductivity • Cation exchange capacity	Sampling shall be done at various type of soils (agriculture/forest/barren etc.) within the core and buffer zone (across minimum 5 locations). Samples for soil should be collected and analysed as per: • NABL accredited laboratory
• Sodium Absorption Ratio (SAR) • Water holding capacity • Permeability • Available NPK • Available Organic Carbon	• Standard methodology for collection of soil samples • ICAR standards for available NPK to be followed.
E. Land Use	Land use based on Digital Survey of entire study area (including core and buffer zone) using Satellite Remote Sensing survey (1:50000)
F. Biological Environment	
Flora (both aquatic* and terrestrial) • Vegetation-species list, economic importance, forest produce, medicinal value • Importance value index (IVI) of trees • Diversity indices • Rare and endangered species *Aquatic assessment requirement in case of proximity of ML area to river / perennial nallah.	Detailed description of flora and fauna (terrestrial and aquatic) existing in the core and buffer zone shall be given with special reference to rare, endemic and endangered species. Indicator species which indicate ecological and environment degradation should be identified and included to clearly state whether the proposed project would result into any adverse effect on any species. Secondary data to be collected from Government offices, NGOs, published literature.
Fauna (both aquatic* and terrestrial) • Enumeration of zoo plankton and benthos • Fisheries • Diversity indices • Rare and endangered species • Avi fauna • Details of Sanctuaries / National Park / • Biosphere reserve Migratory routes/CRZ/ Marine Parks *Aquatic assessment requirement in case of proximity of ML area to river / perennial nallah.	

G. Socio-Economic	
• Demographic structure, traditional skills, sources of livelihood • Socio-economic profile of the people with in 2, 5 and 10 km from the core zone.	• Measures for occupational health and safety of the manpower in the mine should be given.
• Human settlement, health status, sources of livelihood • Data relating to historically, culturally and ecologically important places in core as well as buffer areas • Information on notified tribal settlements, if any • Infrastructure resource base • Health status: Morbidity pattern • Education	• Socio-economic survey shall be based on proportionate, stratified and random sampling method. • Primary data collection through questionnaire • Secondary data from census records, statistical hand books, topo sheets, health records and relevant official records available with Govt. Agencies

- iv. Map (1:50,000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided.
- v. A contour map showing the area drainage of the core zone and surrounding 10 kms radius should be depicted such as to clearly indicate the water courses and the location where they ultimately join with major rivers / streams.
- vi. The data generated should be validated through secondary data sources / published literature (example - routine environmental monitoring or CAAQMS, CEQMS data (if available) for mines/projects in vicinity).
- vii. Summary of the baseline environmental data and inference w.r.t cause of deviations in concentrations of environmental parameters.

Impact assessment and mitigation measures Air

- i. In case of expansion proposals, Cumulative Environmental Impact Assessment study of all the existing and proposed projects in the 10 kms radius of the core zone area shall be conducted and the same shall be included the in EIA/EMP report. Details of industrial units present in 10 kms radius of the core zone shall be earmarked in map and submitted.
- ii. The impact of construction (particularly if constructed in forest land) and associated mitigation measures must also be provided.
- iii. In case of proximity of mining infrastructure to habitation/water bodies, adequate safety measures should be provided as per the Coal Mining Regulations, 2017 and DGMS circulars issued from time to time and environmental protection measures like wind barriers, Vertical Greenery System (VGS), avenue/buffer plantation, etc.
- iv. Impacts of mineral handling & transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided, especially w.r.t impact on habitation in case of transportation through village roads. Impacts of generation of effluents from workshop, sewage, etc. & management plan for maintenance of machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these

activities should also be provided.

- v. Air quality modelling should be carried out for prediction of impact of the project on air quality of the area. It should *interalia* take into account the emissions from DG sets if any, impact of movement of vehicles for transportation of coal. The details of the model used and input parameters for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and habitations. The wind roses showing pre- dominant wind direction may also be indicated on the map.
- vi. The number and efficiency of mobile/static water sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding should be provided and details w.r.t frequency of their use/operation to ensure efficient mitigation in terms of air quality should be provided.
- vii. Impacts of CHP, if any on air and water quality should be given. A flow chart showing water balance along with the details of zero discharge should be provided.
- viii. Project proponent shall explore feasibility for transitioning towards adoption of EVs and eco-friendly mode of transport.

Noise

- i. Measures for noise control in the work zone and surrounding areas should be provided. All the DG sets should have proper acoustic measures to reduce noise pollution.

Water

- i. Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime (both dynamic and static resources) within the core zone and 10 kms buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater in the buffer zone should be reflected. Necessary mitigation measures w.r.t quality of mine water, treatment, utilization and discharge of mine water must be provided.
- ii. Treatment facility should be based on mine water characteristics and domestic waste water characteristics.

Hydrogeology

- i. Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted.
- ii. Detailed water balance should be provided (breakup of water requirement as per different activities in the mining operations, including for sand stowing). Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
- iii. In case of need for river/nallah diversion, impact assessment and proper mitigation plan is required; diversion plan approved by competent authority is to be submitted.

Land

- i. Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre-mining status to the extent possible should be provided and submitted with detailed cost provisions.
- ii. The details regarding Progressive Mine Development and Conceptual Final Mine Closure Plan should also be provided and shown in plans/drawings.
- iii. The project proponent shall prepare comprehensive plantation plan including number of saplings to be planted, location of plantation, target for survival rate and budget all along the periphery of mine infrastructure. Plantation plan should be prepared in such a way that 80% of the plantation to be carried out in first 5 years and for the remaining years the proposal for gap filling should be provided. The seedling of height not less than 2 meters to be selected and accordingly cost of plantation needs to be decided. The plantation plan should cover areas other than core zone.
- iv. Project proponent is advised to submit an action plan towards implementation of the 'Ek Ped Maa Ke Naam' Campaign which was launched on 5th June 2024 on the occasion of the World Environment Day to increase the forest cover across the Country. This plantation drive is other than green belt development. The action in this regard shall be submitted concerned RO in six monthly report.

Flora & Fauna

- i. If the study area (core and buffer zone) has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 10 kms of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.

Waste Management

- i. Quantification of solid and hazardous wastes, including corresponding impacts and management plan to be provided.
- ii. Project proponent shall submit the action plan to adhere to the Plastic Waste Management Rules 2016 and to adhere Ministry's OM dated 18/07/2022.

Additional studies

- i. Risk assessment and management as per the Coal Mining Regulations, 2017 and other applicable statutes must be summarized in the EIA/EMP report. Measures for addressing occupational health and safety risks of the personnel and manpower engaged in the mine should be submitted in line with work zone regulations. The risk assessment studies must be undertaken by qualified institutes engaged in mine planning projects and the detailed report may be attached as annexure to the EIA/EMP report. These studies may be aligned with DGMS norms.
- ii. Study on subsidence including modelling for prediction, mitigation/prevention of

subsidence, continuous monitoring measures, and safety issues should be carried out from reputed institutes equipped for the same. The subsidence study should *interalia* include seismic characteristics of the location of the project site. Summary of the same along with the mitigation measures should be included in the EIA/EMP report and detailed report should be attached as Annexure.

- iii. Traffic assessment study to be done considering transportation of coal from the coal stockyard either upto siding or upto nearest public transport route/highway. Adequacy of existing roads, impact due to additional traffic and proposed management / mitigation measures to be provided.
- iv. In case of diversion of power line / transmission lines / railway line / roads – the impact assessment of such diversions and corresponding mitigation proposed in line with the permissions/NoC obtained from the competent Authority shall be provided.
- v. Assessment of carbon emission intensity of the project should be summarized in the EIA/EMP report including measures to reduce the same in line with GoI NDC commitments / SDGs should be provided. The detailed report may be attached as an annexure to the EIA/EMP report.
- vi. Details w.r.t R&R plan should be summarized in the EIA/EMP report. Detailed project specific R&R Plan with data on the existing socio- economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc. and costs along with the schedule of the implementation of the R&R Plan should be given as annexure to the EIA/EMP report.
- vii. In case the project is located either in Critically Polluted Area or in Severely Polluted Area, the proponent must submit additional action plan to address environmental safeguards as per OM dated 31st October, 2019 (Ref. F. No. 22-23/2018-IA.III (Pt)).
- viii. Signed copy of complete Public Hearing Proceedings (forwarding letter to MoEF&CC by SPCB, notice issued in newspaper for PH, PH MoM, Attendance sheet, PH photographs, written representations received during public hearing and written communication submitted, notarized copy of English translation of PH proceeding including written representation and response submitted) to be enclosed as Annexures to the EIA/EMP report.
- ix. Action plan duly addressing the issues raised during the Public Hearing and Consultation with physical and financial outlay as per Ministry's OM dated 30.09.2020 shall be included as per the table given below:

Proposed Activities under Public Hearing	Place of Implementation (Physical targets)	Year wise financial outlay in, Rs. Lakhs					
		Year - 1	Year - 2	Year - 3	Year - 4	Year - 5	Total

Environmental Management Plan

- i. Summary containing mitigation measures to be adopted for each environment

component during development and operation phase of UG coal mining shall be submitted.

- ii. Details of the Environment Management Cell
- iii. Performance monitoring of pollution control devices and Effluent Treatment Plant shall be furnished.
- iv. Cost of Environmental Management Plan (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- v. Corporate Environment Policy:
 - a. The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - b. The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements /deviation/violation of the environmental or forest norms/conditions.
 - c. The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
 - d. To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
- vi. In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.

Environmental Monitoring Plan

- i. Details w.r.t environmental monitoring plan in terms of air (including fugitive emissions), noise, water, soil to ensure effectiveness of mitigation measures deployed shall be provided
- ii. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.

Project Benefits

- i. Details regarding benefits of the project w.r.t improvements in physical and social infrastructure, employment potential and other tangible benefits to be provided.

Legal and statutory approvals and details w.r.t litigations

- i. Status of any litigations/ court cases filed/pending on the project should be provided in below format

S. No.	Name of the Court/Tribunal	Name of the specific Court/ Bench	Case Category	Status of court case	Orders/Directions of the court, if any, and its relevance with the proposed project

- i. Copy of clearances/approvals such as Forestry Clearance, Mining Plan / Mine Closure Plan approval, NOC from CGWA, NOC from Flood and Irrigation Dept. (if req.), NBWL, NTCA, etc. wherever applicable.
- ii. Details on the Forestry Clearance (*if forest land is involved*) should be given as per the format given:

Total ML /Project Area (ha)	Total Forest Land (ha)	Status w.r.t FC received		Status w.r.t balance Forest Land	
		Date of FC	Extent Of Forest Land	Balance area For which FC is yet to be obtained	Status of appl. For diversion of forest land

- iii. In case of expansion proposals, Certified Compliance Report (CCR) from RO, MoFF&CC is required to be submitted.
- iv. Necessary coordination shall be made with concerned SPCB (who is responsible for Compliance of OM dated 14.01.2025) regarding streamlining the implementation of GSR 702 and GSR 703 dated 12.11.2024 through which projects requiring prior EC were exempted from requirement of CTE.
- v. In case of diversion of water body / road / railway lines / transmission line, approval for the same from competent authority must be submitted.

Summary and conclusion

- i. An executive summary of the report covering key findings of EIA/EMP study are to be provided.

Details regarding consultant and laboratories engaged

- i. It should be ensured that only NABET-accredited consultants shall be engaged for the preparation of EIA/EMP Reports. PP shall ensure that the accreditation of the consultant is valid during the collection of baseline data, preparation of EIA/EMP report and the appraisal process. The PP and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the Ministry are factually correct and the PP and consultant are fully accountable for the same.
- ii. Project proponent shall submit the EIA/EMP report after the plagiarism check using authenticated plagiarism software.
- iii. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

The TORs prescribed for undertaking detailed EIA study are as follows:

- i. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- ii. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- iii. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- iv. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- v. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- vi. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- vii. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- viii. Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- ix. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

- x. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- xi. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- xii. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- xiii. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- xiv. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- xv. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- xvi. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- xvii. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- xviii. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and

buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

- xix. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- xx. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- xxi. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- xxii. One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- xxiii. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be

shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

- xxiv. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- xxv. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- xxvi. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- xxvii. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- xxviii. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- xxix. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- xxx. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- xxxi. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- xxxii. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving

the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

- xxxiii. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- xxxiv. Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- xxxv. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- xxxvi. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- xxxvii. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- xxxviii. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- xxxix. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- xl. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- xli. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- xl. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- xl. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- xliv. Besides the above, the below mentioned general points are also to be followed :-
 - a) Executive Summary of the EIA/EMP Report

- b) All documents to be properly referenced with index and continuous page numbering.
 - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC / NABL accredited laboratories. All the original analysis / testing reports should be available during appraisal of the Project.
 - e) Where the documents provided are in a language other than English, an English translation should be provided.
 - f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
 - g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
 - h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
 - i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
 - j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.
- xlv. After preparing the draft EIA (as per the generic structure prescribed in Appendix- III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- xlvi. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

I. Statutory Compliance

- i. The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
- ii. The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of fire fighting equipment etc as per National Building Code including protection measures from lightening etc.
- iii. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
- iv. In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs union of India and ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".
- v. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- vi. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- vii. The project proponent shall obtain the necessary permission for drawl of ground water / surface water required for the project from the competent authority.
- viii. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.
- ix. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.
- x. The provisions of the Solid Waste (Management) Rules, 2016, e-Waste (Management) Rules, 2016, and the Plastics Waste (Management) Rules, 2016 shall be followed.
- xi. The project proponent shall follow the ECBC/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.
- xii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel (kerosene/gas) for cooking,

safe drinking water, medical health care, etc. The housing may be in the form of temporary structures to be removed after completion of the project.

- xiii. Provision of drinking water, waste water disposal, solid wastes management and primary health facilities shall be ensured for labour force. Proper sanitation facilities shall be provided at the construction site to prevent health related problems. Domestic as well as sanitary wastes from construction camps shall be cleared regularly.
- xiv. All the labourers to be engaged for construction works shall be screened for health and adequately treated before issue of work permits. The contractor shall ensure periodic health check-up of construction workers.
- xv. All vehicles/equipment deployed during construction phase shall be ensured in good working condition and shall conform to applicable air and noise emission standards. These shall be operated only during non-peak hours.
- xvi. Accumulation/stagnation of water shall be avoided ensuring vector control.
- xvii. Water during construction phase should be preferred from Municipal supply.
- xviii. Unskilled construction labourers shall be recruited from the local areas.
- xix. Monitoring of ground water table and quality once in three months shall be carried out. Construction of tube wells, bore wells shall be strictly regulated.
- xx. Adequate provision shall be made to cater the parking needs. Parking spaces standards as given in "Manual on Norms and Standards for Environmental Clearance of Large Construction Projects" issued by Ministry of Environment and Forests, Government of India shall be adopted.
- xxi. Rest room facilities shall be provided for service population.
- xxii. Water body falling within premises (if any) shall not be lined or no embankment shall be cemented. The water bodies, if any, shall be kept in natural conditions without disturbing the ecological habitat.
- xxiii. Construction shall conform to the requirements of local seismic regulations. The project proponent shall obtain permission for the plans and designs including structural design, standards and specifications of all construction work from concerned authority.

II. Air quality monitoring and preservation

- i. Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.
- ii. A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.
- iii. The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants

released (e.g. PM10 and PM25) covering upwind and downwind directions during the construction period.

- iv. Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.
- v. Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3 meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.
- vi. Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.
- vii. Wet jet shall be provided for grinding and stone cutting.
- viii. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
- ix. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules 2016.
- x. The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.
- xi. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.
- xii. For indoor air quality the ventilation provisions as per National Building Code of India.

III. Water quality monitoring and preservation

- i. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.

- ii. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
- iii. Total fresh water use shall not exceed the proposed requirement as provided in the project details.
- iv. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
- v. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.
- vi. At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
- vii. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
- viii. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.
- ix. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
- x. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
- xi. The local bye-law provisions on rain water harvesting should be followed. If local byelaw provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.
- xii. A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.



- xiii. All recharge should be limited to shallow aquifer.
- xiv. No ground water shall be used during construction phase of the project.
- xv. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.
- xvi. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
- xvii. Sewage shall be treated in the STP with tertiary treatment. The treated effluent from STP shall be recycled/re-used for flushing, AC make up water and gardening. As proposed, no treated water shall be disposed in to municipal drain.
- xviii. No sewage or untreated effluent water would be discharged through storm water drains.
- xix. Onsite sewage treatment of capacity of treating 100% waste water to be installed based on the MBBR/MBR/SBR technology. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.
- xx. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
- xxi. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.

IV. Noise monitoring and prevention

- i. Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.
- ii. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

- iii. Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.

V. Energy Conservation measures

- i. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.
- ii. Outdoor and common area lighting shall be LED.
- iii. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
- iv. Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.
- v. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
- vi. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.

VI. Waste Management

- i. A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.
- ii. Disposal of muck during construction phase shall not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
- iii. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.
- iv. Organic waste compost/ Vermiculture pit/ Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.

- v. All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.
- vi. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
- vii. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.
- viii. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016., Ready mixed concrete must be used in building construction.
- ix. Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Rules, 2016.
- x. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.

VII. Green Cover

- i. No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).
- ii. A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.
- iii. Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.
- iv. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

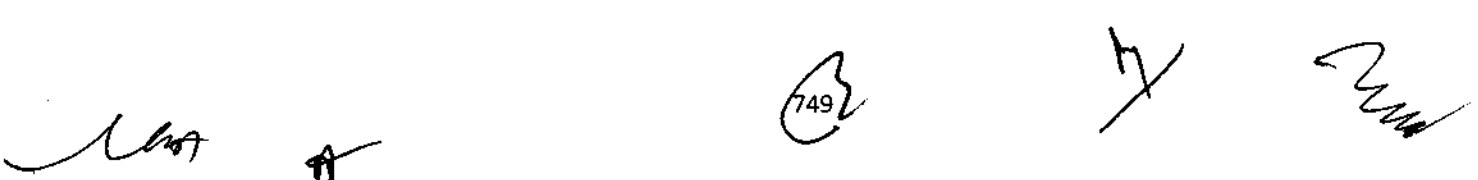
VIII. Transport

- i. A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.
 - a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
 - b. Traffic calming measures.
 - c. Proper design of entry and exit points.
 - d. Parking norms as per local regulation
- ii. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.
- iii. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

IX. Human Health Issues

- i. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
- ii. For indoor air quality the ventilation provisions as per National Building Code of India.
- iii. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- iv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- v. Occupational health surveillance of the workers shall be done on a regular basis.
- vi. A First Aid Room shall be provided in the project both during construction and operations of the project.

X. Corporate Environment Responsibility



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- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

XI. Miscellaneous

- i. The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC/SEIAA website where it is displayed.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

- vi. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
- vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xi. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.
- xiv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.
- xvi. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.

