MINUTES OF THE 121ST MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 08TH, 09TH, 10TH, 11TH AND 12TH MARCH, 2025.

The 121st meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 08th, 09th, 10th, 11th and 12th March, 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 Niranjan Lal Agarwalla - Member
3. Dr. Raju Kumar - Member
4. Shri Ashok Kumar Dubey, IFS (Retd.) - Member
5. Dr. Ajay Govind Bhatt - Member
6. Shri Srikant Verma, IFS - Member Secretary

SEIAA forwarded various projects to the SEAC for the technical appraisal after the last SEAC meeting held on 20th, 21st, 22nd, 23rd and 24th January, 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 : March 08th, 2025 [Saturday]

A. **Ref. no. 344, dated 18.02.2025 from Member Secretary, JSPCB, Ranchi regarding seeking guidance on the ToR issued to the units mentioned in Pakur Region.**

The application for issuance of ToR was submitted to SEAC within the validity of DSR.

Hence, as the DSR was valid at the time of receipt of application on PARIVESH Portal by SEAC, it was considered for grant of ToR.

Accordingly, the issuance of ToR fulfils all the requisite norms.

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B. <u>Deputy Commissioner –cum- District Magistrate, Deoghar or through authorized representative.</u>

i. Final District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone), Distt. Deoghar.

The Final DSR was submitted by Deputy Commissioner, Deoghar. He was represented by Shri Subhas Ravidas, District Mining Officer, Deoghar at the SEAC meeting on 08.03.2025.

During the meeting the DMO, Giridih presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The final DSR had been placed in the public domain for 21 days from the 13.01.2025. As per the Sub Divisional Committee no comments / observations were received.

The DSR has been prepared as per the format provided in the above notification. The DSR submitted has been approved by the Sub-Divisional Committee. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory.

Hence, the Final DSR for Minor Minerals other than Sand Mining or River Bed Mining (Stone) of District Deoghar is recommended to SEIAA for approval.

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C. <u>Deputy Commissioner –cum- District Magistrate, Giridih or through authorized representative.</u>

i. Updated (Final) District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone), Distt. Giridih.

The Udated (Final) DSR was submitted by Deputy Commissioner, Giridih. He was represented by Shri Satyajit Kumar Singh, District Mining Officer, Giridih at the SEAC meeting on 08.03.2025.

During the meeting the DMO, Giridih presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The final DSR had been placed in the public domain for 21 days from the 14.10.2024. As per the Sub Divisional Committee no comments / observations were received.

The DSR has been prepared as per the format provided in the above notification. The DSR submitted has been approved by the Sub-Divisional Committee. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory.

Hence, the Updated (Final) DSR for Minor Minerals other than Sand Mining or River Bed Mining (Stone) of District Giridih is recommended to SEIAA for approval.

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D. Consideration of proposals :

1. **Proposed Commercial cum Residential Complex namely "FLORESTA" of Darling Housing Pvt. Ltd., Village : Simaliya, Tehsil : Ratu, Distt. : Ranchi, Jharkhand.**

   (Proposal no.: SIA/JH/INFRA2/ 526929 /2025)

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

   This is a new project which has been taken for appraisal on 08.03.2025.

   Project Sector: 8(a) Building and Construction Projects , Category: B2.

   Application for Environment Clearance (EC) as per EIA notification, 2006.

Item	Details			
Project Name	Proposed Commercial cum Residential Complex namely "FLORESTA"			
Location	Village : Simaliya Tehsil : Ratu District: Ranchi State : Jharkhand			
Plot Area & its break – up	Total Plot Area	9105.43 Sq.m.		
	Gifting of Land (From Front)	392.30 Sq.m.		
	Ground Coverage (35%)	3049.58 Sq.m.		
	Total Open Space including Green Cover	5663.52 Sq.m. Open Parking : 1460.97 Sq.m. Internal Road :1,489.93Sq.m. Pavement Area : 277.22 Sq.m. Plantation :2435.40 Sq.m.		
Total Built-Up Area & its break - up	Floor	Commercial	Block A	EWS
	Basement	2558.73	2813.96	0.00
	Lower Ground	1743.79	1530.70	122.91
	First	1848.21	1738.37	167.43
	Second	1854.90	1739.96	167.43
	Third	1854.90	1739.95	167.43
	Fourth	1883.79	1739.96	167.43
	Fifth	1883.79	1739.95	0.00
	Sixth	1883.79	1739.95	0.00
	Seventh	1883.79	1739.95	0.00
	Eighth	0.00	1739.96	0.00
	Terrace	0.00	78.15	0.00

	Sub-Total	17395.72	18340.86	792.63
	Total Built-Up Area	36529.21		
Number of Block	*3* ✓ *Commercial Block* ✓ *Residential Block (A)* ✓ *EWS Block*			
Population	Total No. of Occupancy: 2170	Floating Population: 237		
Municipal Solid Waste	752.00 Kg / Day including Bio-degradable (40% of MSW) : 300.80 Kg / Day & Non-Biodegradable (60% of MSW) : 451.20 Kg / Day			
Parking	185 Car Parking for Flat 60 Car Parking for Visitors 250 Two-Wheelers			
Power Requirement	Power Requirement	1 MW		
	Energy Saving	Upto 20%		
	Power Back-up	700 kva		
	Renewal Energy	*1% of the total demand*		
RWH Pits	4 Nos of Recharge pit			
Total no. of Dwelling Units	Residential : 109, Shops : 40 & Office : 32			
No. of Floors	B+G+8			
Total Project Cost	Rs. 67.87 Crores.			
EMP Cost (Construction Phase)	Capital Cost: Rs. 23.00 Lakh Recurring Cost: Rs. 11.00 Lakh			
EMP Cost (Operational Phase)	Capital Cost: Rs. 120.00 Lakh Recurring Cost: Rs. 6.00 Lakh			
Disaster Management	Separate Assembly Points will be marked for each section. Residents will be made aware of the safety protocols and escape routes.			
Coordinates	23°21'58.93" N to 85°15'12.92" E			

LAND DETAILS

Khata no.	Plot no.
166	3765
353	3766

Connectivity

Nearest Railway Station	Nearest Railway is Hatia Railway Station, which is about 8.46 Km & Ranchi Railway Station which is about 8.50 Km.

Nearest Airport	Nearest Airport is Birsa Munda Airport which is about 9.19 Km.
Nearest Highway	Nearest Highway is NH-43 which is adjacent to the project site.
ESZ	Not within 15 km
Waterbody	Dhurwa Dam (7.35 Km) Subarnarekha River (7.5 Km) Ranchi Lake (6.4 Km) Kanke Dam (5.6 Km)
Defense Installation	Not Within 15 Km
Educational Institute	DAV Public School (50m) St. Xavier's techno school (253m) Suraj Public School (425m) Amity University (3.6 Km) Indian Institute of Management (2.7 Km)
Healthcare Facilities	Paras Hospital (6.4 Km) Orchid Hospital (8.2 Km) Raj Hospitals (7.2 Km) RIMS (10 Km) Sadar Hospital (7.5 Km)

WATER & WASTEWATER
Water Demand

Residential Blocks	**Domestic @90L Per head**		**Flushing @45L per head**	
1 BHK	**5.94**		**2.97**	
2 BHK	**8.91**		**4.46**	
3 BHK	**39.87**		**19.94**	
4 BHK	**6.30**		**3.15**	
Sub-Total	**61.02**		**30.51**	
	Make-up Water		**Recycled Water from WTP**	
Swimming Pool	**7.74**		**33.04**	
Commercial Blocks	**Fix**		**Floating**	
	Domestic @25L per head	**Flushing @20L per head**	**Domestic @5L per head**	**Flushing @10L per head**
Shop	**26.08**	**20.86**	**0.59**	**1.17**
Office	**12.80**	**10.24**	**0.29**	**0.57**
Sub-Total	**38.88**	**31.10**	**0.87**	**1.74**

Water Demand Total (UNIT : KLD)		Source
Domestic	100.77	Fresh Water from Municipal Supply / Ground Water
10% Make-up Water for Swimming Pool	7.78	Fresh Water from Municipal Supply / Ground Water
Flushing	63.35	Treated Water from STP
Dust Suppression & Landscaping	4.53	Treated Water from STP
Car Washing	5.00	Treated Water from STP
Water for Swimming Pool from WTP	33.04	Treated Water from WTP
Total Water Demand	214.47	
Total Fresh Water Demand	108.55	
Total Treated Water Demand	105.92	
Discharge to Municipal Drain	42.29	

WASTE WATER MANAGEMENT

STP Calculation (KLD)			
Total Domestic Water	100.77	80.62	80% of Domestic Water is Waste Water
Total Flushing Water	63.35	63.35	100% of Flushing Water is Waste Water
Total Volume of Waste Water		**143.97**	
STP Capacity		**150.00**	

Waste Water Management (KLD)	
Volume of Treated Water from STP i.e., 80% of Waste Water	115.17
Break-Up	
Flushing	63.35
Dust Suppression & Landscaping	4.53
Car Washing	5.00
Discharge to Municipal Drain	42.29
Loss 20 % loss on account of evaporation, loss in conveyance and processing.	28.79

WATER TREATMENT PLAN (WTP)

	Water Demand	Loss 10%	Waste Water
Swimming Pool	40.78 KL	4.07 KL	36.71 KL
Water Treatment Plant (WTP) : 50 KL			
Treated Water	33.04 KL	10% Loss during Processing	3.67 KL

❖ **Solid Waste Management**

Construction Phase

Solid Waste generated during construction phase would include top soil, brick bats, pieces of reinforcing roads, pieces of wood boards & waste of other construction material, cans of paints electrical wire, etc.

Top Soil would be separately stored at pre-defined location within the site & preserved for landscaping. Sub – Soil would be stored for reuse in road making, plinth filling, etc.

Brickbats wastes of concrete would also be stored for road construction, etc. Surplus C & D waste would be handed over to Municipal Solid Waste Management Facility. E-Waste & Hazardous waste (cans of paints_ would be collected in separates containers. Recyclable wastes including bags, packing, pcs of steel rods sold to rag pickers.

Operational Phase

Estimated quantity of municipal solid waste Community building & residential building.

During operational phase of buildings municipal solid waste would be generated. They would be stored in different colour bins.

- ✓ Recyclable Waste - Blue
- ✓ Non-Biodegradable Waste - Black
- ✓ Bio-Degradable Waste - Green
- ✓ E-Waste - Yellow
- ✓ Hazardous Waste - Red

Recyclable Wastes would be handed to rag pickers.

Bio-Degradable Waste would be treated into Organic Waste Convertor (OWC) and the product will be utilize as fertilizer.

E-Waste & Hazardous Wastes would be handed over to authorized recyclers.

Energy Conservation Measures

- ✓ Replacing 2 x 13W Down lighter in lift lobby with 17W LED.
- ✓ Replacing T5 Tubelight in staircase with 20W LED.
- ✓ Replacing 70W MHL Street lights with 40W LED.
- ✓ Providing 100% of Street lights & common lighting on **SOLAR.**
- ✓ Replacing normal lighting with LED for Landscape.
- ✓ Using Variable Frequency Drive (VFD) for Lift machines, we can save 10% of consumption.
- ✓ By using Regenerative type lifts, we can save 30% of Consumption.
- ✓ By using Energy efficient motors, we can save 10% of energy.

Statutory Clearances :

1	Land Docs	:	Land developer agreement made.
2	DFO Territorial	:	DFO, Ranchi Forest Division vide letter no. 372, dated 13.02.2025 certified that the distance of reserved / protected forest is less than 250 meters from project site.
3	DFO Wildlife	:	DFO, Wildlife Division, Ranchi vide letter no. 63, dated 29.01.2025 certified that proposed project site is out side Eco Sensitive Zone of Palkot Wildlife Sanctuary.
4	CO certificate	:	The CO, Ratu, Ranchi vide letter no. 28 (ii), dated 25.01.2025 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyan & Register II.
5	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC /EAST /B/ 061824/1076553, dated 23.07.2024 valid up to 22.07.2032.
6	Building Plan approval	:	Conceptual plan submitted.
7	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 8121/Tech./2024, dated 13.12.2024.
8	Affidavit project area & No construction	:	An affidavit submitted stating that no construction activity has been yet started at proposed site.
9	Permssion of tree felling	:	Felling permission for 102 trees has been granted by the Jharkhand Forest Department bearing Acknowledgement no. ACK745169INS.

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Commercial cum Residential Complex namely "FLORESTA" of Darling Housing Pvt. Ltd., Village : Simaliya, Tehsil : Ratu, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –I 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. During construction phase use of STP treated water will be preferred to maximum extend possible. If ground water is used it will be done with due permission of CGWA.

III. During operation phase ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.

IV. 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.

V. All construction material to be stored only under covered shed.

VI. PAs to offset (upto 20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.

VII. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.

VIII. Trees should be developed & maintained not less than 15% of project area.

IX. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.

X. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.

XI. 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.

XII. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.

XIII. 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.

XIV. Sufficient number of EV fast charging points to be installed.

XV. 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.

XVI. ISO 14001 EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

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2. **Goga & Kakbita Stone Deposit of M/s Swastik Mineral Agency (Prop. : Shri Vikram Pratap), Village : Goga & Kakbhita, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.914 Ha).**

(Proposal no.: SIA/JH/MIN/ 524460 /2025)

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

This is a new project which has been taken for appraisal on 08.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for : Boulder Stone: 68286 M^3/Annum (1,84,372 T/Annum, Peak)

PROJECT AND LOCATION DETAILS:

Sl. No.	Parameter		Details	
1	Project Name	:	Goga & Kakbita Stone Deposit	
2	Lessee:	:	M/s Sri Swastik Mineral Agency, (Proprietor: Sri Vikram Pratap)	
3	Lease Address	:	Mouza – Goga & Kakbita, Thana – Taljhari District – Sahibganj, State – Jharkhand.	
4	Lease Area	:	Ha: 2.914 ha.	Acres: 7.20 Ac.
5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	Capital : Rs. 11,85,600	Recurring : Rs. 84,57,100
7	EMP Budget	:	Capital : Rs. 4,85,600	Recurring : Rs. 6,31,600
8	CSR / CER Budget	:	NA	
9	New or Expansion	:	New Project	
10	Mineable Reserves	:	Cu. M.: 6,56,982	Tonnes: 17,73,851
11	Mine Life	:	10 years	
12	Man power	:	17	
13	Water Requirement	:	14.38 KLD	
14	Water Source	:	Dug well for drinking & Village pond/ Closed mine/ River water for dust suppression/ green belt	
15	DG Set / power	:	Not required	
16	Crusher	:	Not within mine lease area	
17	Nearest Water Body	:	Ganga River 5.00 KM.	
18	Nearest Habitation	:	Karanpur Village: 2.00 KM; Taljhari: 8 KM	
19	Nearest Rail Station	:	Karanpurato – 2.5 KM	
20	Nearest Air Port	:	Deoghar - 130 KM	
21	Nearest Forest	:	Not within 250m	
22	Road & Highways	:	Barharwa – Sahibganj Road – 2.50 KM;	

CO-ORDINATES

1	Latitude		From 25^0 08' 58.6974" N	To 25^0 09' 07.2126" N
2	Longitude		From 87^0 42' 21.2341" E	To 87^0 42' 27.0941" E

LAND DETAILS

Khata no.	Plot no.
12	34 (P)
36	202 (P)
08	203 (P)
27	234 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 105/M, dated 21.01.2025.
2	CO	:	The CO, Taljhari vide letter no. 608/Ra., dated 27.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid certificate	:	DMO, Sahibganj vide memo no. 161/M, dated 05.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2457, dated 01.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2458, dated 01.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is lies within the potential village of approved DSR of Sahibganj District (Page no. 192).
7	Gram Sabha	:	Gram Sabha conducted on 26.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 234, dated 08.02.2025.
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.

2	Quarry Area	:	Plan period – 1.246 ha.
3	Waste Generation	:	Plan period – 46,128 m^3
4	Stripping Ratio	:	1:0.05 (overall stripping ratio)
5	Working Days	:	300
6	Benches: Size & No	:	6m x 6m and 8 benches.
7	Elevation of Mine	:	228m AMSL
8	Ground Level Elevation	:	183m AMSL
9	Ultimate Working Depth	:	164 m AMSL
10	Water Table	:	140 m AMSL
11	Topography of Mine	:	General Slope from North to South.
12	Explosive Requirement	:	23,046 kg/year
13	Diesel/Fuel requirement	:	Transport Vehicle & Machineries- 250 Litre/d (DG set not required)

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters
1st	63612	171752	22788	218– 206
2nd	65094	175754	8706	200 – 194
3rd	65550	176985	7530	194 – 188
4th	66690	180063	3510	188 – 182
5th	68286	184372	3594	182 - 170
Total	**329232**	**888926**	**46128**	

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage (Ha)
1	Mining Area	0.000	1.246	2.382	1.400- Water Body 0.361- Backfilled 0.621- dead benches
2	Dump	0.000	0.532	0.000	
3	Office /Store	0.000	0.000	0.000	
4	Crusher	0.000	0.000	0.000	-
5	Road	0.000	0.005	0.000	
6	Safety Zone	0.000	0.532	0.532	Green Belt
7	Unutilized	2.914	0.599	0.000	-
	TOTAL	**2.914**	**2.914**	**2.914**	

ENVIRONMENT MANAGEMENT

Green Belt Development

Sl. No.	LOCATION		Area/Length	No. of Trees
1.	Safety Zone	:	0.532 ha	550 trees
2.	Other Reclaimed Area	:	0.361 ha	150 trees (Conceptual stage)

3.	Haul /Approach Road	:	100 m	100 trees

- 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)	0	4.54
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 800 x 300Rs.	2.4	0.4
03	Garland Drain and Desiltation pond	1.618	0.116
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**4.018**	**5.556**

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.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground	Six Monthly

		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

During first, second and third year gritty soil & intercalated waste will be removed (4206 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 smoothtransportation.
- 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 avoidsuspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loadingpoints, 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

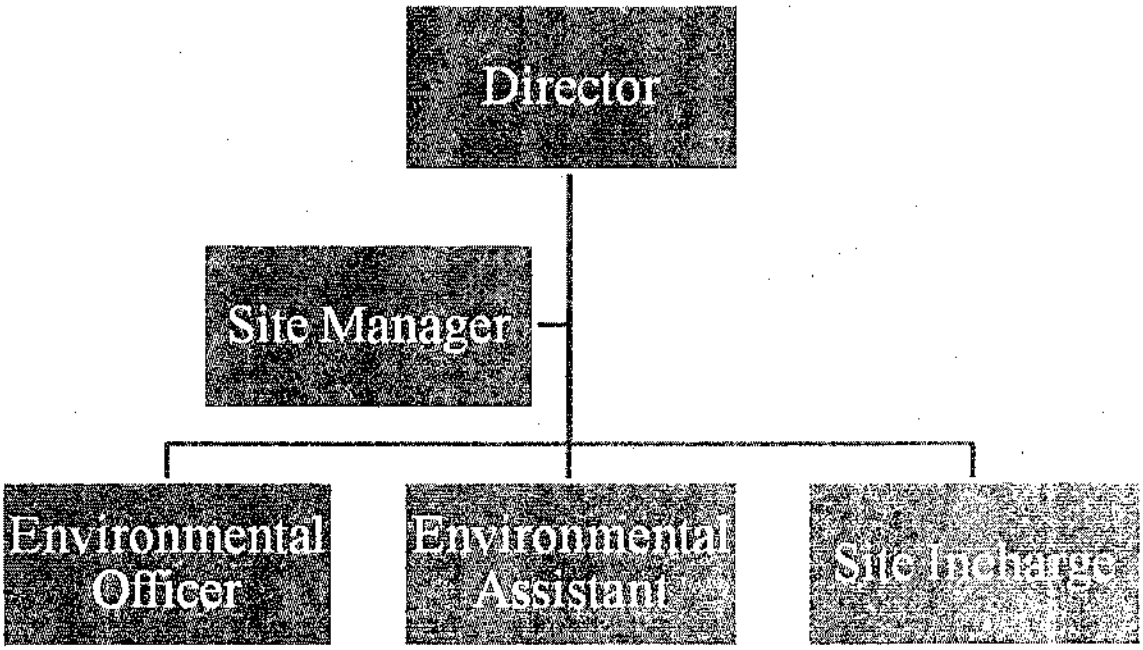
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP

- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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 Goga & Kakbita Stone Deposit of M/s Swastik Mineral Agency (Prop. : Shri Vikram Pratap), Village : Goga & Kakbhita, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.914 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

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.

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 FC can lead to revocation / cancellation of EC.

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3. **Dalabari Stone Deposit of M/s Swastik Mineral Agency (Prop. : Shri Vikram Pratap), Village : Dalabari, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (2.914 Ha).**

(Proposal no.: SIA/JH/MIN/ 524489 /2025)

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

This is a new project which has been listed for appraisal on 08.03.2025.

On the request of PA it has been taken up for appraisal on 12.03.2025.

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

Application for Environmental Clearance (EC).

EC Applicationfor : Boulder Stone: 62142 M^3/Annum (1,67,782 T/Annum, Peak)

PROJECT AND LOCATION DETAILS:

Sl. No.	Parameter		Details	
1	ProjectName	:	Dalabari Stone Deposit	
2	Lessee:	:	M/sSri Swastik Mineral Agency,(Proprietor:Sri Vikram Prata	
3	Lease Address	:	Mouza–Dalabari,Thana–Borio District–Sahibganj,State–Jh	
4	Lease Area	:	Ha:2.914ha.	Acres:7.20Ac.
5	Type ofLand	:	NonForest–Rayati Land	
6	Project Cost	:	Capital : Rs. 12,16,500	Recurring : Rs. 85,1
7	EMPBudget	:	Capital : Rs. 5,16,500	Recurring : Rs. 6,
8	CSR / CERBudget	:	NA	
9	NeworExpansion	:	NewProject	
10	MineableReserves	:	Cu.M.:5,89,469	Tonnes:15,91
11	Mine Life	:	10years	

12	Manpower	:	17
13	WaterRequirement	:	14.98 KLD
14	WaterSource	:	Dug well for drinking & Village pond/ Closed mine/ River water for dust suppression/green belt
15	DG Set / power	:	Not required
16	Crusher	:	Not within mine lease area
17	NearestWaterBody	:	Ganga River12.00KM.
18	NearestHabitation	:	Bindri Village:3.00KM;Borio:10KM
19	Nearest RailStation	:	Kalianchak–8KM
20	Nearest AirPort	:	Deoghar -130KM
21	Nearest Forest	:	Not within250m
22	Road & Highways	:	Borio– Tinpahar– Rajmahal Rd.–1.00KM; Dumka – Sahibganj Rd.- 6km

CO-ORDINATES

1	Latitude		From 25° 02'58.3746" N	To25° 03' 07.4924" N
2	Longitude		From 87°39'54.3285" E	To87° 40' 04.7600" E

LAND DETAILS

Khata no.	Plot no.
11	52 (P) & 61 (P)
12	53 (P) & 62 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1366/M, dated 12.12.2024.
2	CO	:	The CO, Borio, Sahibganj vide memo no. 739/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.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 131/M, dated 30.01.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2456, dated 01.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2558, dated 05.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.

6	DSR	:	The project is not specifically mentioned in the approved DSR of Sahibganj District in Chapter 13. DMO, Sahibganj vide letter no. 431, Dated 11.03.2025 requested to consider the said project proposal as part of chapter 13 (LoI Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for consideration for grant of EC. The Committee accepted the request of the DMO, Sahibganj.
7	Gram Sabha	:	Gram Sabha conducted on 27.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 233, dated 08.02.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 200/M, dated 07.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

WorkingDetails

1	MiningMethod	:	Opencast Mechanized.
2	Quarry Area	:	Plan period–1.313ha.
3	WasteGeneration	:	Plan period–48,546m^3
4	StrippingRatio	:	1:0.06(overallstrippingratio)
5	Working Days	:	300
6	Benches:Size&No	:	6mx6mand 5benches.
7	Elevationof Mine	:	219mAMSL
8	GroundLevelElevation	:	204mAMSL
9	UltimateWorkingDepth	:	165mAMSL
10	WaterTable	:	140mAMSL
11	Topographyof Mine	:	General SlopefromNorthto South.
12	Explosive Requirement	:	20,973kg/year
13	Diesel/Fuelrequirement	:	Transport Vehicle & Machineries- 250 Litre/d(DG set notrequired)

ProductionDetails

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters
1st	57188	154408	19758	213 –207
2nd	57638	155624	12040	207–201
3rd	58539	158055	10349	201–195
4th	59440	160487	3128	195–189

5th	62141	167782	3271	189–183
Total	**294946**	**796356**	**48546**	

LandUse

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Useat End of Life of Mine (Ha)	Land Usage at Conceptual Stage (Ha)
1	MiningArea	0.000	1.313	2.317	1.060- WaterBody 0.183- Backfilled 1.074- dead benches
2	Dump	0.000	0.416	0.000	
3	Office/Store	0.000	0.000	0.000	
4	Crusher	0.000	0.000	0.000	
5	Road	0.000	0.015	0.000	
6	Safety Zone	0.000	0.597	0.597	Green Belt
7	Unutilized	2.914	0.573	0.000	-
	TOTAL	**2.914**	**2.914**	**2.914**	

ENVIRONMENTMANAGEMENT

GreenBeltDevelopment

Sl. No.	LOCATION		Area/Length	No. of Trees
1.	Safety Zone	:	0.597 ha	550 trees
2.	OtherReclaimed Area	:	0.183 ha	150 trees (Conceptualstage)
3.	Haul/Approach Road	:	250 m	100 trees

- 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)	0	4.54

02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 800 x 300Rs.	2.4	0.4
03	Garland Drain and Desiltation pond	1.618	0.116
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**4.018**	**5.556**

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.	2 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 first, second and third year gritty soil & intercalated waste will be removed (4206 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill be taken:

- Overall slope angles of benches will be maintained at 45°.
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- Dust generation during drilling
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- Entrapment in by moving part of the drilling equipment

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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 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from

theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 avoidsuspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (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

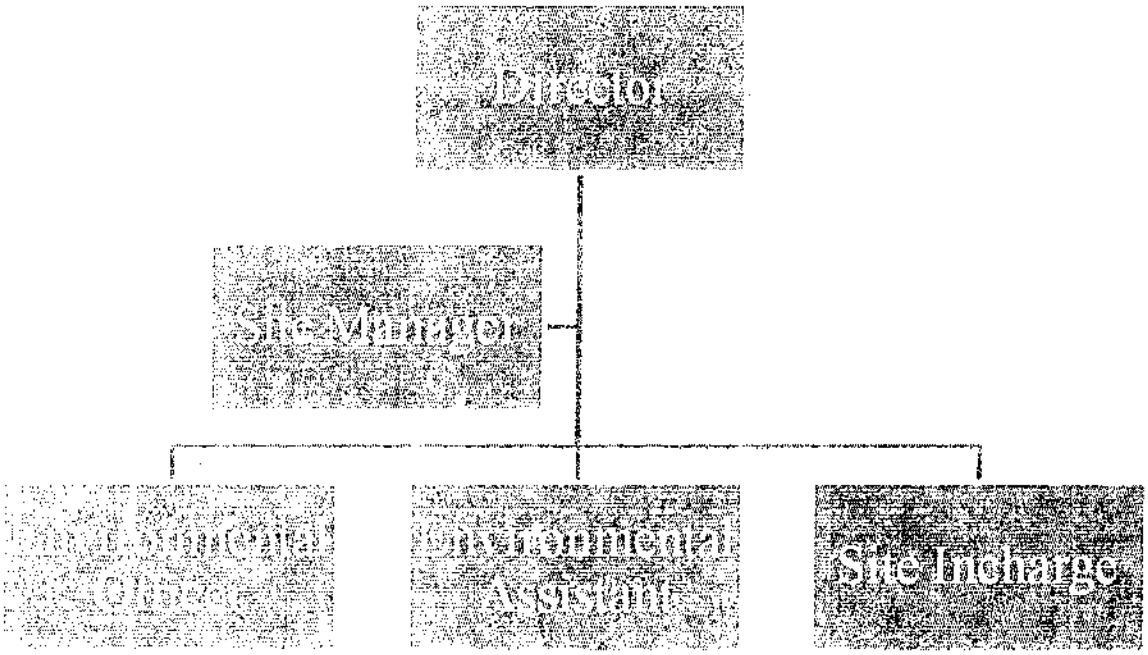
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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

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 Dalabari Stone Deposit of M/s Swastik Mineral Agency (Prop. : Shri Vikram Pratap), Village : Dalabari, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (2.914 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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4. **Balko Stone Deposit of M/s Balaji Mineral Agency (Partner : Shri Akshay Kumar Aryan), Village : Balko, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.023 Ha).**

(Proposal no.: SIA/JH/MIN/ 524273 /2025)

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

This is a new project which has been listed for appraisal on 08.03.2025.

On the request of PA it has been taken up for appraisal on 12.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for : Boulder Stone : 60984 M^3/Annum (1,64,658 T/Annum, Peak)

PROJECT AND LOCATION DETAILS:

Sl. No.	Parameter		Details	
1	Project Name	:	Balko Stone Deposit	
2	Lessee:	:	M/s Sri Balaji Mineral Agency, (Partner:Sri Akshay Kumar Aryan)	
3	Lease Address	:	Mouza–Balko,Thana–Taljhari District–Sahibganj,State–Jharkhand.	
4	Lease Area	:	Ha:2.023ha.	Acres:5.00Ac.
5	Type ofLand	:	NonForest–RayatiLand	
6	Project Cost	:	Capital : Rs. 11,25,600	Recurring : Rs. 84,02,000
7	EMPBudget	:	Capital : Rs. 4,25,000	Recurring : Rs. 5,76,500
8	CSR / CERBudget	:	NA	
9	NeworExpansion	:	NewProject	
10	MineableReserves	:	Cu.M.:5,83,965	Tonnes:15,76,706
11	Mine Life	:	10years	
12	Manpower	:	17	
13	WaterRequirement	:	13.18 KLD	
14	WaterSource	:	Dugwellfordrinking&Village pond/ Closed mine/ Riverwaterfordustsuppression/green belt	
15	DG Set / power	:	Not required	
16	Crusher	:	Not withinmineleasearea	
17	NearestWaterBody	:	Ganga River8.00KM.	

18	NearestHabitation	:	Radha KishunpurVillage:2.00KM;Taljhari:8KM
19	Nearest RailStation	:	KaliyanChak-4KM
20	Nearest AirPort	:	Deoghar -125KM
21	Nearest Forest	:	Not within250m
22	Road & Highways	:	Barharwa – Sahibganj Road –4KM;

CO-ORDINATES

1	Latitude		From 25° 02' 56.9309" N	To 25° 03' 03.1210" N
2	Longitude		From 87°41' 58.6120" E	To 87° 42' 04.0377" E

LAND DETAILS

Khata no.	Plot no.
16	18 (P)
12	19 (P) & 23 (P) .

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1367/M, dated 12.12.2024.
2	CO	:	The CO, Taljhari vide letter no. 521, dated 07.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 132/M, dated 30.01.2025 certified that 01 LoI (7.50 Acre) exists within 500 meters radius from proposed project site and total area is 12.20 Acre.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2278, dated 18.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2279, dated 18.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The project is not specifically mentioned in the approved DSR of Sahibganj District in Chapter 13. DMO, Sahibganj vide letter no. 431, Dated 11.03.2025 requested to consider the said project proposal as part of chapter 13 (LoI Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for

			consideration for grasnt of EC. The Committee accepted the request of the DMO, Sahibganj.
7	Gram Sabha	:	Gram Sabha conducted on 14.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 230, dated 08.02.2025.
9	Redzone Grid		DMO, Sahibganj vide memo no. 199/M, dated 07.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

WorkingDetails

1	MiningMethod	:	OpencastMechanized.
2 3	Quarry Area WasteGeneration	: :	Plan period–1.290ha. Plan period–56,627m^3
4	StrippingRatio	:	1:0.07(overallstrippingratio)
5	Working Days	:	300
6	Benches:Size&No	:	6mx6mand 6benches.
7	Elevationof Mine	:	220mAMSL
8	GroundLevelElevation	:	105mAMSL
9	UltimateWorkingDepth	:	160mAMSL
10	WaterTable	:	100mAMSL
11	Topographyof Mine	:	GentleslopefromNorth-Westto South-East.
12	Explosive Requirement	:	20,582kg/year
13	Diesel/Fuelrequirement	:	Transport Vehicle & Machineries- 250 Litre/d(DG set notrequired)

ProductionDetails

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters
1st	55,923	150991	23229	214–202
2nd	56704	153100	2984	202–196
3rd	57211	154469	11303	208–190
4th	59314	160148	3122	196-178
5th	60984	164658	15989	202-178
Total	**290136**	**783366**	**56627**	

LandUse

SL	Pattern	Existing Land Use(Ha)	ProposedCurrentPlan Period (Ha)	ProposedLand Useat End of LifeofMine (Ha)	Land Usageat ConceptualStage (Ha)
1	MiningArea	0.000	1.290	1.617	0.976- WaterBody 0.216- Backfilled 0.425- dead benches
2	Dump	0.000	0.249	0.000	
3	Office/Store	0.000	0.000	0.000	
4	Crusher	0.000	0.000	0.000	
5	Road	0.000	0.002	0.000	-
6	Safety Zone	0.000	0.406	0.406	Green Belt
7	Unutilized	2.023	0.076	0.000	-
	TOTAL	**2.023**	**2.023**	**2.023**	

ENVIRONMENTMANAGEMENT

GreenBeltDevelopment

Sl. No.	LOCATION		Area/Length	No. of Trees
1.	Safety Zone	:	0.406ha	450trees
2.	OtherReclaimed Area	:	0.216 ha	150trees(Conceptualstage)
3.	Haul/ApproachRoad	:	50m	50trees

- 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)	0	4.54
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 750 x 300Rs.	2.25	0.37
03	Garland Drain and Desiltation pond	1.618	0.116
04.	Environment Monitoring (Air, Water, Noise & Soil	00	0.50

	Monitoring)		
TOTAL		**3.868**	**5.526**

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.	2 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 first, second and third year gritty soil & intercalated waste will be removed (4206 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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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- 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 smoothtransportation.
- 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 avoidsuspension of dust.

- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loadingpoints, 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

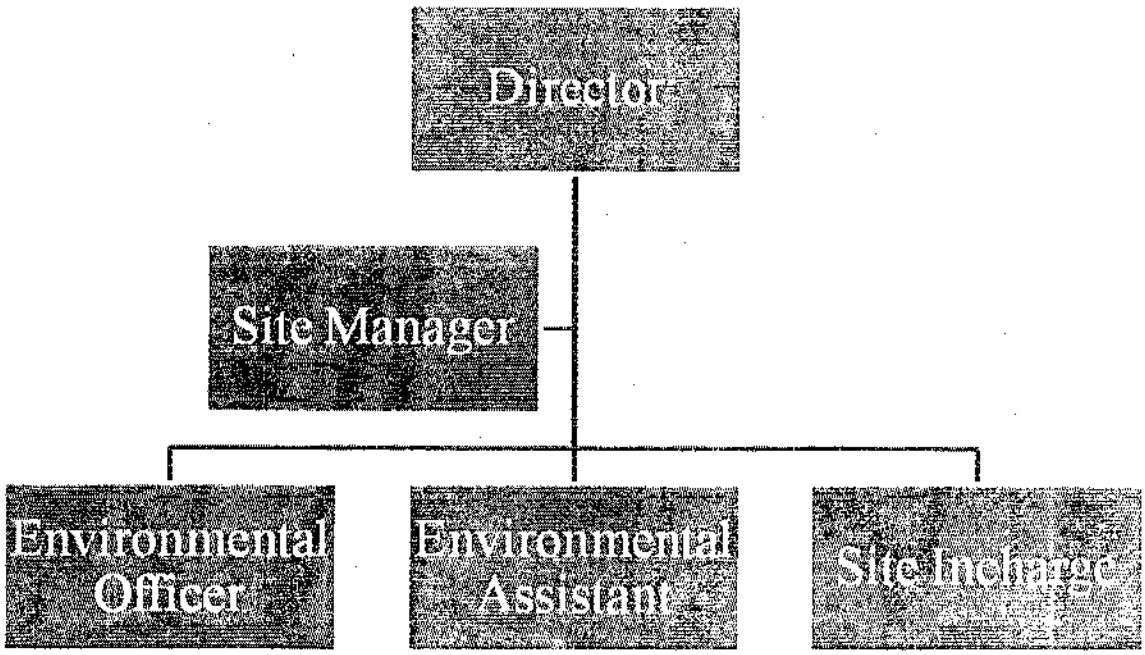
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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.

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 Balko Stone Deposit of M/s Balaji Mineral Agency (Partner : Shri Akshay Kumar Aryan), Village : Balko, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.023 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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. **Balko Stone Deposit of M/s Balaji Mineral Agency (Partner : Shri Akshay Kumar Aryan), Village : Balko, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.914 Ha).**

(Proposal no.: SIA/JH/MIN/ 524290 /2025)

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

This is a new project which has been taken for appraisal on 08.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for : Boulder Stone: 72713 M^3/Annum (1,96,325 T/Annum, Peak)

PROJECT AND LOCATION DETAILS:

Sl. No.	Parameter		Details	
1	Project Name	:	Balko Stone Deposit	
2	Lessee:	:	M/s Sri Balaji Mineral Agency,(Partner:Sri Akshay Kumar Aryan)	
3	Lease Address	:	Mouza–Balko,Thana–Taljhari, District–Sahibganj,State–Jharkhand.	
4	Lease Area	:	Ha: 2.914 ha.	Acres: 7.20 Ac.
5	Type of Land	:	NonForest–RayatiLand	
6	Project Cost	:	Capital : Rs. 11,85,300	Recurring : Rs. 1,04,58,550
7	EMPBudget	:	Capital : Rs. 4,85,300	Recurring : Rs. 6,31,550
8	CSR / CERBudget	:	NA	
9	New or Expansion	:	New Project	
10	Mineable Reserves	:	Cu.M.:7,11,761	Tonnes:19,21,754
11	Mine Life	:	10years	
12	Manpower	:	17	
13	WaterRequirement	:	14.43 KLD	
14	WaterSource	:	Dug well for drinking & Village pond/ Closed mine/ River water for dust suppression/green belt	
15	DG Set / power	:	Not required	
16	Crusher	:	Not within mine lease area	
17	Nearest Water Body	:	Ganga River8.00KM.	
18	Nearest Habitation	:	Radha KishunpurVillage:2.00KM;Taljhari:8KM	
19	Nearest RailStation	:	Kaliyan Chak-4KM	
20	Nearest AirPort	:	Deoghar -125KM	
21	Nearest Forest	:	Not within250m	
22	Road & Highways	:	Barharwa – Sahibganj Road –4KM;	

CO-ORDINATES

1	Latitude		From 25° 03'01.6076" N	To 25° 03' 10.5137" N
2	Longitude		From 87°41' 59.2873" E	To 87° 42' 05.6034" E

LAND DETAILS

Khata no.	Plot no.
09	13 (P)

01	14 (P)
06	17 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1068/M, dated 05.10.2024.
2	CO	:	The CO, Taljhari vide letter no. 522, dated 07.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 133/M, dated 30.01.2025 certified that 01 LoI (5.00 Acre) exists within 500 meters radius from proposed project site and total area is 12.20 Acre.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2276, dated 18.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2277, dated 18.09.2024 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 Sahibganj District (Sl. no. 27, Page no. 164).
7	Gram Sabha	:	Gram Sabha conducted on 14.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 235, dated 08.02.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 201/M, dated 07.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

WorkingDetails

1	MiningMethod	:	Open cast Mechanized.
2	Quarry Area	:	Plan period–1.911ha.
3	Waste Generation	:	Plan period–50,920m^3
4	Stripping Ratio	:	1:0.14(over all stripping ratio)

5	Working Days	:	300
6	Benches:Size & No	:	6mx6m and 8benches.
7	Elevation of Mine	:	178m AMSL
8	GroundLevelElevation	:	151m AMSL
9	UltimateWorkingDepth	:	114m AMSL
10	WaterTable	:	100m AMSL
11	Topographyof Mine	:	Gentle slope from North-West to South-East.
12	Explosive Requirement	:	24,540kg/year
13	Diesel/Fuelrequirement	:	Transport Vehicle & Machineries- 250 Litre/d(DG set notrequired)

ProductionDetails

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters
1st	69,935	188825	21139	174–156
2nd	72713	196325	12685	156–150
3rd	71488	193016	3763	144–138
4th	72223	195002	3801	138–132
5th	70311	189841	9533	168-126
Total	**356670**	**963009**	**50920**	

LandUse

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage (Ha)
1	MiningArea	0.000	1.911	2.382	1.460- WaterBody 0.240- Backfilled 0.682- dead benches
2	Dump	0.000	0.329	0.000	
3	Office/Store	0.000	0.000	0.000	
4	Crusher	0.000	0.000	0.000	
5	Road	0.000	0.005	0.000	-
6	Safety Zone	0.000	0.532	0.532	Green Belt
7	Unutilized	2.914	0.137	0.000	-
	TOTAL	**2.914**	**2.914**	**2.914**	

ENVIRONMENTMANAGEMENT

GreenBeltDevelopment

Si. No.	LOCATION		Area/Length	No. of Trees
1.	Safety Zone	:	0.532ha	550 trees
2.	Other Reclaimed Area	:	0.24 ha	100trees (Conceptual stage)
3.	Haul/Approach Road	:	-	-

- 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)	0	4.54
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 650 x 300Rs.	1.95	0.32
03	Garland Drain and Desiltation pond	1.618	0.116
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**3.568**	**5.476**

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.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground	Six Monthly

		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

During first, second and third year gritty soil & intercalated waste will be removed (4206 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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.
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- 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.

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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 smoothtransportation.
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- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loadingpoints, 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

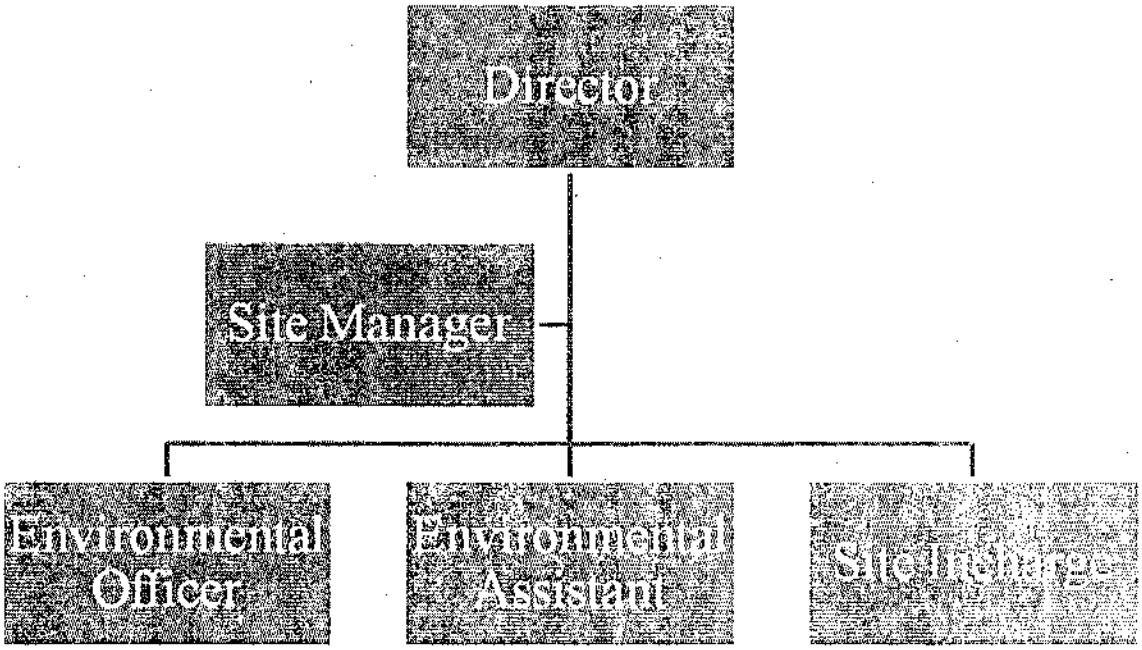
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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 Balko Stone Deposit of M/s Balaji Mineral Agency (Partner : Shri Akshay Kumar Aryan), Village : Balko, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.914 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

6. **Kakbita Stone Deposit of M/s Balaji Mineral Agency (Partner : Shri Akshay Kumar Aryan), Village : Kakbita, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.023 Ha).**

(Proposal no.: SIA/JH/MIN/ 524314 /2025)

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

This is a new project which has been taken for appraisal on 08.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for : Boulder Stone: 59931 M^3/Annum (1,61,813 T/Annum, Peak)

PROJECT AND LOCATION DETAILS:

Sl. No.	Parameter		Details
1	Project Name	:	Kakbita Stone Deposit
2	Lessee:	:	M/s Sri Balaji Mineral Agency,(Partner:Sri Akshay Kumar Aryan)

3	Lease Address	:	Mouza–Kakbita,Thana–Taljhari District–Sahibganj,State–Jharkhand.	
4	Lease Area	:	Ha:2.023ha.	Acres:5.00Ac.
5	Type ofLand	:	NonForest–Rayati Land	
6	Project Cost	:	Capital : Rs. 11,23,800	Recurring : Rs. 83,31,870
7	EMPBudget	:	Capital : Rs. 4,23,800	Recurring : Rs. 5,06,370
8	CSR / CERBudget	:	NA	
9	NeworExpansion	:	NewProject	
10	MineableReserves	:	Cu.M.:5,72,508	Tonnes:15,45,772
11	Mine Life	:	10years	
12	Manpower	:	17	
13	WaterRequirement	:	13.18 KLD	
14	WaterSource	:	Dug well for drinking & Village pond/ Closed mine/ River water for dust suppression/green belt	
15	DG Set / power	:	Not required	
16	Crusher	:	Not within mine lease area	
17	Nearest WaterBody	:	Ganga River5.00KM.	
18	Nearest Habitation	:	Karanpur Village:2.00KM;Taljhari:8KM	
19	Nearest Rail Station	:	Karanpurato–2.5KM	
20	Nearest AirPort	:	Deoghar -130KM	
21	Nearest Forest	:	Not within250m	
22	Road & Highways	:	Barharwa – Sahibganj Road –2KM;	

CO-ORDINATES

1	Latitude		From 25° 09'07.4469" N	To25° 09' 12.6139" N
2	Longitude		From 87°42'20.6128" E	To 87° 42' 26.5433" E

LAND DETAILS

Khata no.	Plot no.
33	208 (P)
24	209 (P)
27	234 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 108/M, dated 21.01.2025.
2	CO	:	The CO, Taljhari vide letter no. 606/Ra., dated 27.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid certificate	:	DMO, Sahibganj vide memo no. 162/M, dated 05.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2459, dated 01.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2460, dated 01.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The LoI was granted on 21.01.2025. The DSR for Sahibganj was approved by the Sub-Divisional Committee on 21.12.2024 and submitted to SEIAA for approval on 16.01.2025. However, this project lies within the potential zone area T_PZ4 in page no. 192 of approved DSR.
7	Gram Sabha	:	Gram Sabha conducted on 26.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 232, dated 08.02.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

WorkingDetails

1	MiningMethod	:	OpencastMechanized.
2	Quarry Area	:	Plan period–1.324ha.
3	WasteGeneration	:	Plan period–33,418m^3
4	Stripping Ratio	:	1:0.04(over all stripping ratio)
5	Working Days	:	300
6	Benches:Size & No	:	6mx6mand 7benches.
7	Elevation of Mine	:	232m AMSL
8	Ground Level Elevation	:	172m AMSL

9	UltimateWorkingDepth	:	155m AMSL
10	WaterTable	:	140m AMSL
11	Topography of Mine	:	General Slope from North to South.
12	Explosive Requirement	:	20,226kg/year
13	Diesel/Fuel requirement	:	Transport Vehicle & Machineries- 200 Litre/d(DG set notrequired)

ProductionDetails

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters
1st	54924	148295	12346	227–209
2nd	55808	150681	5572	209–197
3rd	56691	153066	5619	197–193
4th	57133	154259	5487	193–187
5th	59931	161813	4394	187-181
Total	**284487**	**768115**	**33418**	

LandUse

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Useat End of Life of Mine (Ha)	Land Usage at Conceptual Stage (Ha)
1	MiningArea	0.000	1.324	1.619	0.301- WaterBody 0.276- Backfilled 1.042- dead benches
2	Dump	0.000	0.280	0.000	
3	Office/Store	0.000	0.000	0.000	
4	Crusher	0.000	0.000	0.000	
5	Road	0.000	0.003	0.000	-
6	Safety Zone	0.000	0.404	0.404	Green Belt
7	Unutilized	2.023	0.012	0.000	-
	TOTAL	**2.023**	**2.023**	**2.023**	

ENVIRONMENTMANAGEMENT

GreenBeltDevelopment

Sl. No.	LOCATION		Area/Length	No. of Trees
1.	Safety Zone	:	0.404ha	450trees
2.	Other Reclaimed Area	:	0.276 ha	100 trees (Conceptual stage)
3.	Haul/ApproachRoad	:	100m	100trees

- 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)	0	4.54
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 650 x 300Rs.	1.95	0.32
03	Garland Drain and Desiltation pond	1.618	0.116
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**3.568**	**5.476**

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.	2 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,	2 station	Six Monthly

	texture, water holding capacity, etc.		

Solid Waste Management

During first, second and third year gritty soil & intercalated waste will be removed (4206 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 smoothtransportation.
- 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 avoidsuspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loadingpoints, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

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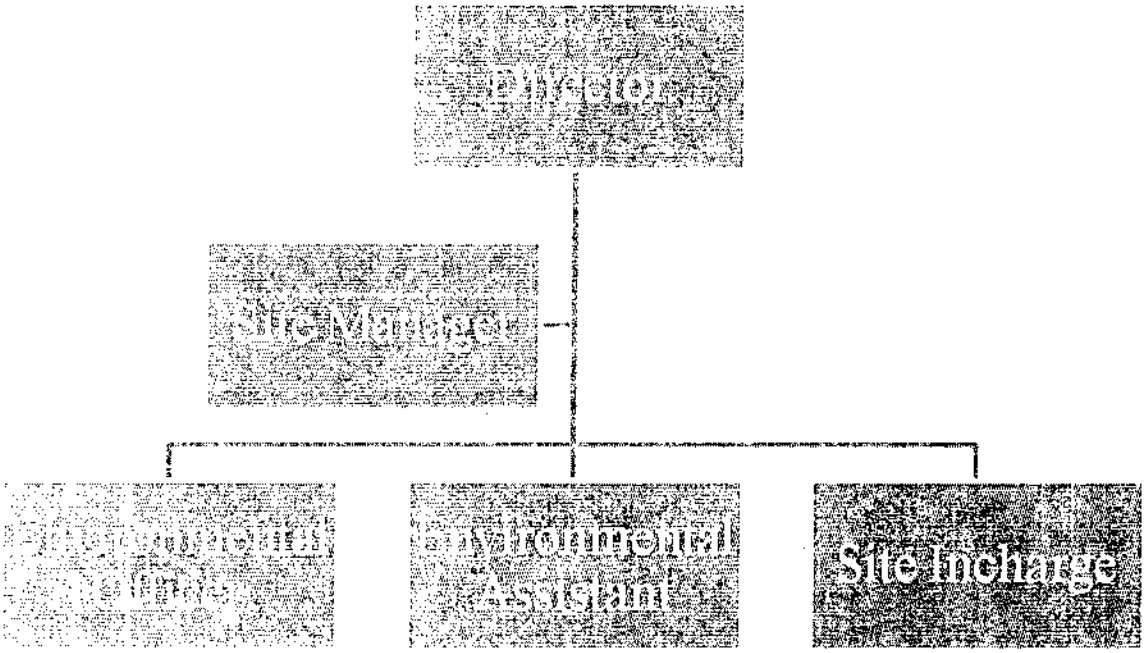

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EMP Process Flow

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
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 Kakbita Stone Deposit of M/s Balaji Mineral Agency (Partner : Shri Akshay Kumar Aryan), Village : Kakbita, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.023 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

7. **Kachori Bedo Stone Mine of M/s Hindustan Industries & Mining Corporation (Partner : Shri Vikram Pratap), Village : Kachori Bedo, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.835 Ha).**

(Proposal no.: SIA/JH/MIN/ 523740 /2025)

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

This is a new project which has been taken for appraisal on 08.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for :Boulder Stone: 86685 M^3/Annum (2,34,050 T/Annum, Peak)

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kachauri Bedo Stone Mine	
2	Lessee:	:	M/s Hindustan Industries & Mining Corporation, (Prop: Sri Vikram Pratap)	
3	Lessee Address	:	Mouza – Kachouri Bedo, Thana – Taljhari District – Sahibganj, State – Jharkhand.	
4	Lease Area	:	Ha: 2.835 ha.	Acres: 7.00 Ac.
5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	Capital : Rs. 12,75,000	Recurring : Rs. 2,75,74,100
7	EMP Budget	:	Capital : Rs. 5,75,00	Recurring : Rs. 7,14,100
8	New or Expansion	:	New Project	
9	Mineable Reserves	:	Cu. M.: 7,80,933	Tonnes: 21,08,520
10	Mine Life	:	10 years	
11	Man power	:	42	
12	Water	:	17.10 KLD	

	Requirement		
13	Water Source	:	Dug well for drinking & Village pond/ Closed mine/ River water for dust suppression/ green belt
14	DG Set / power	:	Not required
15	Crusher	:	Not within mine lease area
16	Nearest Water Body	:	Ganga River 5.00 KM.
17	Nearest Habitation	:	Karanpurato Village: 3.00 KM; Taljhari: 5 KM
18	Nearest Rail Station	:	Karanpurato – 3 KM
19	Nearest Air Port	:	Deoghar - 130 KM
20	Nearest Forest	:	Not within 250m
21	Road & Highways	:	Dumka – Sahibganj Road – 5.00 KM;

CO-ORDINATES

1	Latitude	From 25^0 08' 17.44" N	To 25^0 08' 25.72" N
2	Longitude	From 87^0 42' 36.92" E	To 87^0 42' 46.74" E

LAND DETAILS

Khata no.	Plot no.
07	43 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 776/M, dated 16.08.2024.
2	CO	:	The CO, Taljhari vide letter no. 276, dated 25.06.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 855/M, dated 31.08.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1848, dated 20.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 1623, dated 20.06.2022 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 Sahibganj District (Sl. no. 4, Page no. 154).
7	Gram Sabha	:	Gram Sabha conducted on 25.06.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 775, dated 16.08.2024.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 318/M, dated 18.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	Qualified Person	:	Shri J.P. Bhattacharya vide letter dated 08.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized.
2	Quarry Area	:	Plan period – 1.120 ha.
3	Waste Generation	:	Plan period – 76,766 m3
4	Stripping Ratio	:	1:0.08 (overall stripping ratio)
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m and 11 benches. (In Conceptual Stage).
7	Elevation of Mine	:	186m AMSL
8	Ground Level Elevation	:	65m AMSL
9	Ultimate Working Depth	:	117 m AMSL
10	Water Table	:	56 m AMSL
11	Topography of Mine	:	General Slope from North- West to South- East.
12	Explosive Requirement	:	29,256 kg/year
13	Diesel/Fuel requirement	:	Transport Vehicle & Machineries- 300 Litre/d (DG set not required)

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)
1st	50403	136088	41319
2nd	65961	178095	3547
3rd	86685	234050	-
4th	77701	210036	
5th	77810	210087	-
Total	**358650**	**968356**	**76,766**

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage (Ha)
1	Mining Area	0.000	1.120	1.903	1.903- Water Body
2	Dump	0.000	0.500	0.000	
3	Office /Store	0.000	0.000	0.000	
4	Crusher	0.000	0.000	0.000	
5	Road	0.000	0.020	0.000	
6	Safety Zone	0.000	0.720	0.720	Green Belt
7	Unutilized	2.835	0.475	0.212	Green Belt
	TOTAL	**2.835**	**2.835**	**2.835**	

ENVIRONMENT MANAGEMENT

Green Belt Development

Safety Zone (Ha.)	Approach Road (m)	Total number of tree @ 1600 tree per Hectare
0.720	100	1252

- 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.

The mine site will be properly fenced properly. A board of Do Not Enter, Only Authorized Access will be fixed near the water reservoir area and at the gate of the mine site.

1. A warning sign board will be erected at the site giving general information about the hazards at the site.
2. The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.
3. Plantation is also proposed at the backfilled area along with around the benches.

Total Ware Reservoir Potential in Post Mine Closure

=Area x Ultimate Depth

= 1.903 x 100 x 100 sqm x 10 m (Below surface level)

= 1,90,300 cum.

ENVIRONMENTMANAGEMENT

GreenBeltDevelopment

Sl. No.	LOCATION		Area/Length	No. of Trees
1.	Safety Zone	:	0.720ha	550 trees
2.	OtherReclaimed Area	:	0.212 ha	150 trees (Conceptual stage)
3.	Haul/Approach Road	:	100m	100 trees

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)	0	4.54
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 800 x 300Rs.	2.4	0.4
03	Garland Drain and Desiltation pond	1.618	0.116

04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**4.018**	**5.556**

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.	2 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 first, second and third year gritty soil & intercalated waste will be removed (4206 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 smoothtransportation.
- 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 avoidsuspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loadingpoints, 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

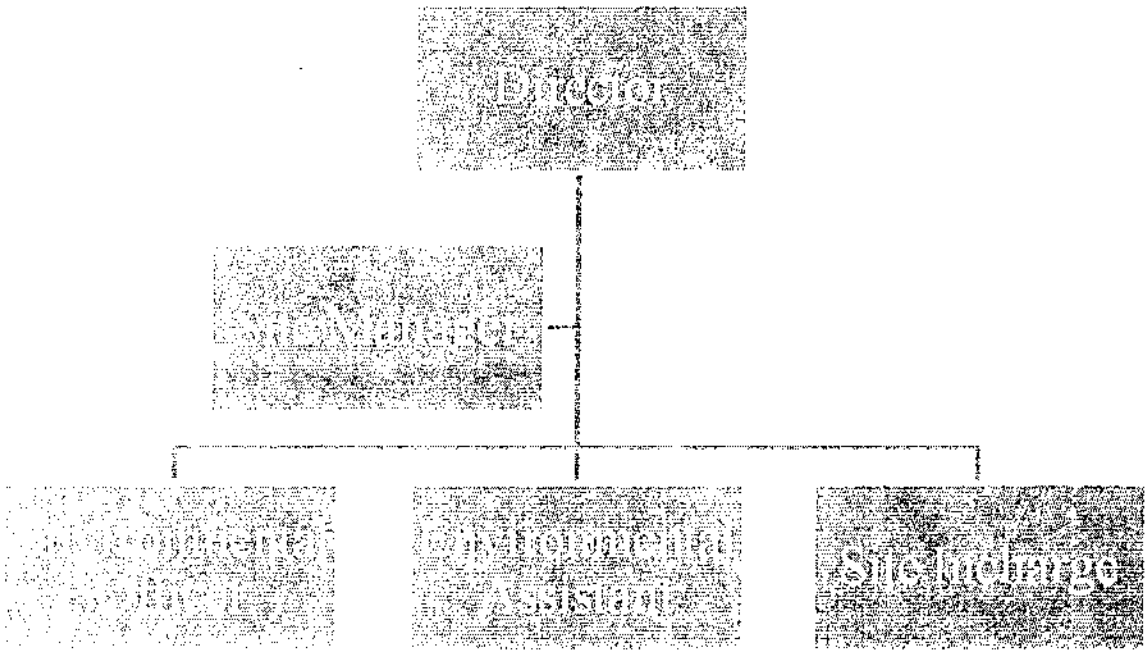
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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

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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 Kachori Bedo Stone Mine of M/s Hindustan Industries & Mining Corporation (Partner : Shri Vikram Pratap), Village : Kachori Bedo, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.835 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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8. **Bindri Bandarkola Stone Deposit of M/s Vaishnavi Stone Works (Partner : Shri Mukesh Ranjan Singh & Others), Village : Bindri Bandarkola, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (2.469 Ha).**

(Proposal no.: SIA/JH/MIN/ 523918 /2025)

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

This is a new project which has been taken for appraisal on 08.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for :Boulder Stone:73202 Cu.M./Year i.e.1,97,646 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bindri Bandarkola Stone Deposit	
2	Lessee:	:	M/s Vaishnavi Stone Works, (Partner: Sri Mukesh Ranjan Singh)	
3	Lessee Address	:	Mouza – Bindri Bandarkola, Thana – Jirwabari District – Sahibganj, State – Jharkhand.	
4	Lease Area	:	Ha: 2.469 ha.	Acres: 6.10 Ac.
5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	Capital : Rs. 11,53,200	Recurring : Rs. 1,04,32,500
7	EMP Budget	:	Capital : Rs. 4,53,200	Recurring : Rs. 6,02,500
8	New or Expansion	:	New Project	
9	Mineable Reserves	:	Cu. M.: 7,23,401	Tonnes: 19,53,183.38 Tonnes
10	Mine Life	:	10 years	
11	Man power	:	20	
12	Water Requirement	:	13.86 KLD	
13	Water Source	:	Dug well for drinking & Village pond/ Closed mine/ River water for dust suppression/ green belt	
14	DG Set / power	:	Not required	
15	Crusher	:	Not within mine lease area	

16	Nearest Water Body	:	Mahisol River 3 KM/ Ganga River – 14 km.
17	Nearest Habitation	:	Bindri Bandarkola Village: 0.60 KM; Borio: 07 KM
18	Nearest Rail Station	:	Kalyanchal - 15 KM
19	Nearest Air Port	:	Deoghar - 120 KM
20	Nearest Forest	:	Not within 250m
21	Road & Highways	:	SH – 1.50 KM and NH 33 – 15 KM;

CO-ORDINATES

1	Latitude	\From 25° 03' 20.0253" N	To 25° 03' 24.9126" N
2	Longitude	From 87° 37' 54.3024" E	To 87° 38' 03.0413" E

LAND DETAILS

Khata no.	Plot no.
64	341 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 745/M, dated 14.08.2024.
2	CO	:	The CO, Borio vide memo no. 568/Ra., dated 20.09.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 595/M, dated 09.07.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2431, dated 24.09.2022 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 73, dated 07.01.2023 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 Sahibganj District (Sl. no. 05, Page no.154).
7	Gram Sabha	:	Gram Sabha conducted on 22.07.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 1092, dated 08.10.2024.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 309/M, dated 18.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	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.
2	Quarry Area	:	Plan period – 1.702 ha.
3	Waste Generation	:	Plan period – 55,580 m3
4	Stripping Ratio	:	1:0.057 (overall stripping ratio)
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m and 11 benches.
7	Elevation of Mine	:	218m AMSL To 160m AMSL
8	Ground Level Elevation	:	130m AMSL
9	Ultimate Working Depth	:	138 m AMSL
10	Water Table	:	126 m AMSL
11	Topography of Mine	:	Gentle slope from North to South.
12	Explosive Requirement	:	24,705 kg/year
13	Diesel/Fuel requirement	:	Transport Vehicle & Machineries- 220 Litre/day, (DG not required)

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)
1st	70,694	190874	24346

2nd	71,321	192567	13984
3rd	72,105	194684	9570
4th	72,732	196376	3828
5th	73,202	197464	3853
Total	**3,60,055**	**9,72,148**	**55,580**

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.00	1.702	2.004	Water Body
2	Dump	0.00	0.232	0.000	-
3	Office /Store	0.00	0.000	0.000	-
4	Crusher	0.00	0.000	0.000	-
5	Road	0.00	0.002	0.000	-
6	Safety Zone	0.00	0.465	0.465	Green Belt
7	Unutilized	2.469	0.068	0.000	-
	TOTAL	**2.469**	**2.469**	**2.469**	

ENVIRONMENT MANAGEMENT

Green Belt Development

Safety Zone (Ha.)	Approach Road (m)	Total number of tree @ 1600 tree per Hectare
0.465	50	844

- 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)	0	4.54
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 700 x 300Rs.	2.1	0.35
03	Garland Drain and Desiltation pond	1.618	0.116
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**3.718**	**5.506**

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.	2 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 first, second and third year gritty soil & intercalated waste will be removed (4206 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in removed

gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 smoothtransportation.
- 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 avoidsuspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loadingpoints, 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

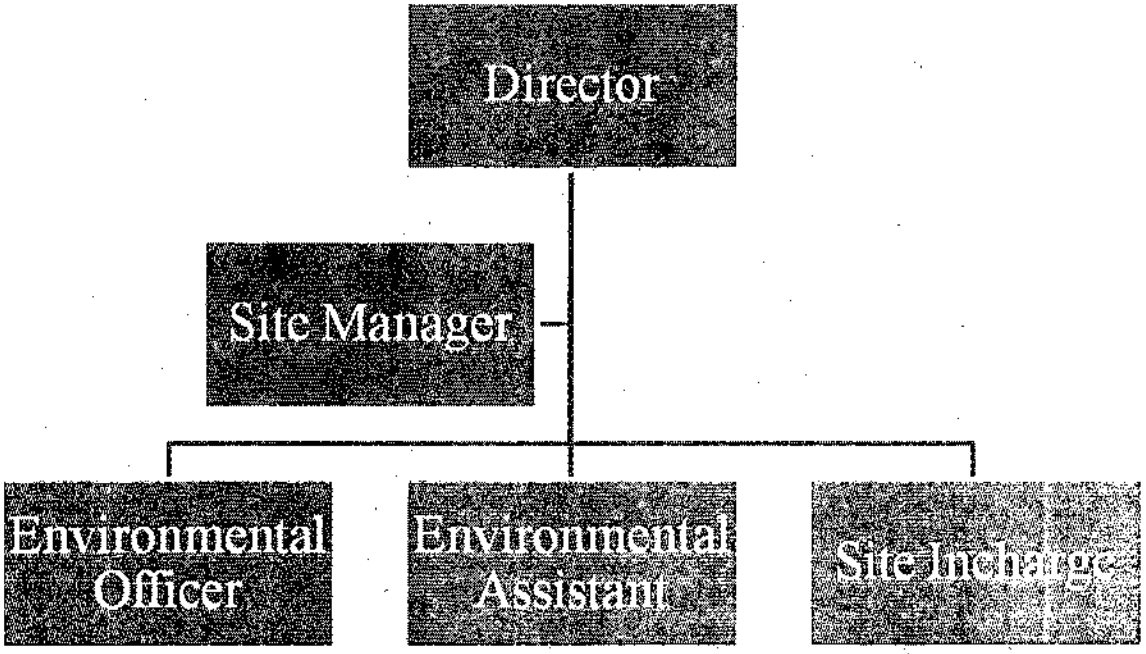
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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 Bindri Bandarkola Stone Deposit of M/s Vaishnavi Stone Works (Partner : Shri Mukesh Ranjan Singh & Others), Village : Bindri Bandarkola, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (2.469 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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. **Ichak Khurd Stone Deposit of M/s Jaishankar Shyamakant (P) Limited (Director : Shri Niwas Kumar), Village : Ichak - Khurd, Tehsil : Simariya, Distt. : Chatra, Jharkhand (1.558 Ha).**

(Proposal no.: SIA/JH/MIN/ 526398 /2025)

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

This is a new project which has been taken for appraisal on 08.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for : Boulder Stone: 22235.7 Cu.M./Year i.e.60036.39 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Ichak Khurd Stone Deposit	
2	Lessee:	:	M/s Jaishankar Shyamakant Pvt. Limited, (Director: Sri Niwas Kumar)	
3	Lessee Address	:	Mouza – Ichak Khurd, Thana – Simariya District – Chatra, State – Jharkhand.	
4	Lease Area	:	Ha: 1.558 ha.	Acres: 3.85 Ac.
5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	Capital : Rs.11,82,600	Recurring : Rs. 58,53,600
7	EMP Budget	:	Capital : Rs. 4,82,600	Recurring : Rs. 6,28,100
8	New or	:	New Project	

	Expansion			
9	Mineable Reserves	:	Cu. M.: 2,03,436	Tonnes: 5,49,277 Tonnes
10	Mine Life	:	10 years	
11	Man power	:	17	
12	Water Requirement	:	12.30 KLD	
13	Water Source	:	Dug well for drinking & Village pond/ Closed mine/ River water for dust suppression/ green belt	
14	DG Set / power	:	Not required	
15	Crusher	:	Not within mine lease area	
16	Nearest Water Body	:	Mahane River 0.8 KM.	
17	Nearest Habitation	:	Ichak Khurd Village: 0.70 KM; Simariya: 10 KM	
18	Nearest Rail Station	:	Katkamsandi – 25 KM	
19	Nearest Air Port	:	Ranchi - 150 KM	
20	Nearest Forest	:	Not within 250m	
21	Road & Highways	:	Hazaribagh – Chatra Road - 10 KM;	

CO-ORDINATES

1	Latitude	From 24° 05' 49.41717122" N	To 24° 05' 55.74287860" N
2	Longitude	From 84° 59' 43.08420951" E	To 84° 59' 48.67779357" E

LAND DETAILS

Khata no.	Plot no.
14	416, 418 & 420
55	415 (P)
01	417, 419 & 424
94	423 & 414 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Chatra vide letter no. 148/Khanan, dated 29.01.2025.
2	CO	:	The CO, Simariya vide letter no. 696, dated 23.11.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Chatra vide memo no. 246, dated 22.02.2025 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. 245, dated 10.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Chatra South Forest Division vide letter no. 212, dated 31.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is lies within the potential village of approved DSR of Sahibganj District (Page no. 100).
7	Gram Sabha	:	BDO, Simariya vide letter no. 200, dated 13.02.2024 informed that Gram Sabha conducted on 12.12.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Chatra vide Letter No. 208/Khanan, dated 13.02.2025.
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.
2	Quarry Area	:	Plan period – 0.656 ha.
3	Waste Generation	:	Plan period – 26,469 m3
4	Stripping Ratio	:	1:0.26 (overall stripping ratio)
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m and 4 benches.
7	Elevation of Mine	:	526m AMSL to 516m AMSL

8	Ground Level Elevation	:	485m AMSL
9	Ultimate Working Depth	:	495 m AMSL
10	Water Table	:	480 m AMSL
11	Topography of Mine	:	Gentle slope from North to South.
12	Explosive Requirement	:	7,504 kg/year
13	Diesel/Fuel requirement	:	Transport Vehicle & Machineries- 200 Litre/day, (DG not required)

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)
1st	19160.55	51733.49	9142.45
2nd	19712.50	53223.75	11578.50
3rd	21052.95	56842.97	3432.05
4th	21762.60	58759.02	1145.40
5th	22235.70	60036.39	1170.30
Total	**103924.30**	**280595.61**	**26468.70**

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.00	0.656	1.032	0.861- Water Body 0.065 – Back Filled 0.106- dead Benches
2	Dump	0.00	0.270	0.000	
3	Office /Store	0.00	0.000	0.000	
4	Crusher	0.00	0.000	0.000	
5	Road	0.00	0.005	0.000	
6	Safety Zone	0.00	0.526	0.526	Green Belt
7	Unutilized	1.558	0.101	0.000	-
	TOTAL	**1.558**	**1.558**	**1.558**	

ENVIRONMENT MANAGEMENT

Green Belt Development

Safety Zone (Ha.)	Approach Road (m)	Total number of tree @ 1600 tree per Hectare
0.526	100	942

- 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)	0	4.54
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 725 x 300Rs.	2.17	0.36
03	Garland Drain and Desiltation pond	1.618	0.116
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**3.788**	**5.516**

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.	2 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 first, second and third year gritty soil & intercalated waste will be removed (4206 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 smoothtransportation.
- 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 avoidsuspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (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

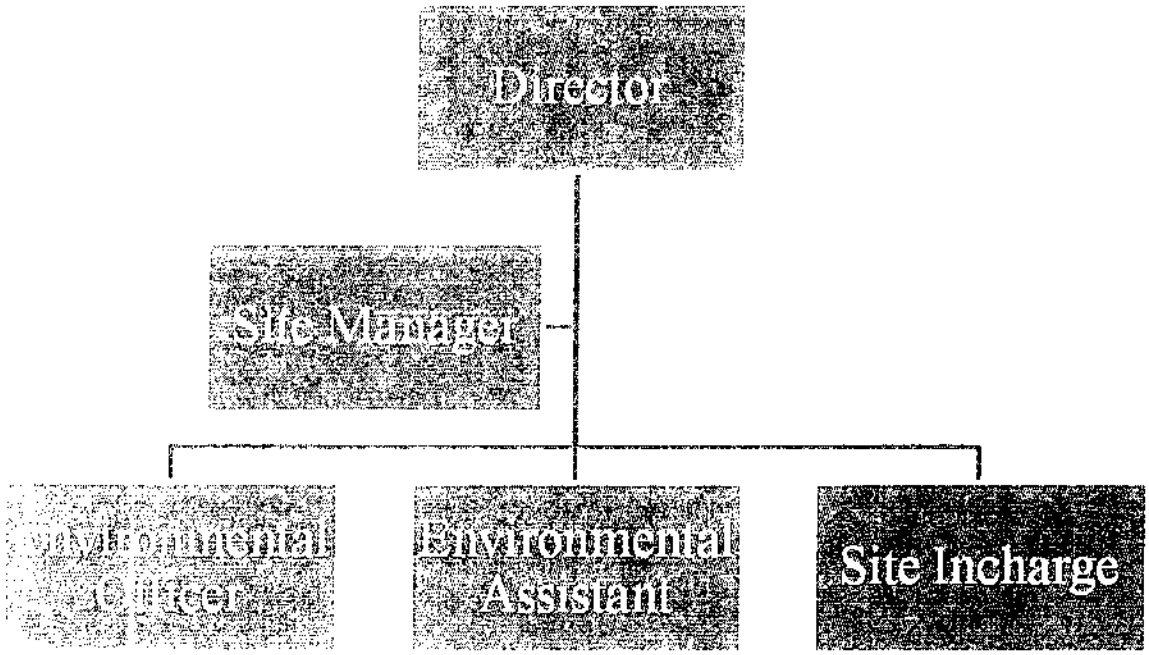
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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 Ichak Khurd Stone Deposit of M/s Jaishankar Shyamakant (P) Limited (Director : Shri Niwas Kumar), Village : Ichak - Khurd, Tehsil : Simariya, Distt. : Chatra, Jharkhand (1.558 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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10. **Basia Stone Deposit of Shri Manoj Kumar Jaiswal, Village : Basia, Tehsil : Basia, Distt. : Gumla, Jharkhand (1.618 Ha).**

(Proposal no.: SIA/JH/MIN/ 512033 /2024)

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

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

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

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA/ 2016-17/ 0013/2017/11, dated 25.03.2017.

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, Gumla which has been taken up for consideration on 22.01.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 883/M dated 28.10.2024 by DMO, Gumla is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 99, dated 20.01.2025..

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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–168Tonnes/Day

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Basia Stone Mine	
2	Lessee:	:	M/s Manoj Kumar Jaiswal	
3	Lessee Address	:	Village –Basia, P.O + P.S – Basia, District – Gumla, Jharkhand	
4	Lease Area	:	1.618 Ha	Acres- 4.00 Acre
5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital: 9.752 Lakhs	Recurring: 47.65 lakhs / year
7	EMP Budget	:	Capital: 2.752 Lakhs	Recurring: 5.42 lakhs / year
8	New or Expansion	:	Re-appraisal of DEIAA EC	
9	Mineable Reserves	:		Tonnes: 364462.00tonnes
10	Mine Life	:	Up to the lease period i.e. 04.11.2017 to 03.11.2027.	
11	Man power	:	15	
12	Water Requirement	:	8.44KLD (Drinking: 0.6KLD, Industrial:4.672KLD, Plantation: 3.168KLD)	
13	Water Source	:	By authorised hired water tankers	
14	DG Set / power	:	-	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	South Koel river is situated at a distance of 1.0 kmin South-West direction.	
17	Nearest Habitation	:	Basia, at a distance of 1.5 Km in East direction.	

18	Nearest Rail Station	:	PoklaRailway station, approx. 20km towards East direction
19	Nearest Air Port	:	Birsa Munda Airport, Ranchiat a distance of 100 km NorthEast - direction.
20	Nearest Forest	:	None
21	Road & Highways	:	SH –23 at a distance of ENE direction.

CO-ORDINATES

Latitude	N22°52'46.65" to N22°52'50.87"
Longitude	E84°48'40.17" to 84°48'48.44"

LAND DETAILS

Khata no.	Plot no.
249	08 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DC, Gumla vide letter no. 1055/M, dated 11.11.2016. ii. Lease deed : 04.11.2017 to 03.11.2027.
2	CO	:	The CO, Basia vide letter no. 651/Ra., dated 31.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 882/M, dated 28.10.2024 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. 616, dated 06.07.2023 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 memo no. 1667, dated 22.08.2014 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 Gumla District (Sl. no. 16, Page no. 42).

7	Gram Sabha	:	Gram Sabha conducted on 16.06.2008.
8	Mining Scheme / Mine Plan Approval	:	i. Mine plan approved by Assistant Mining Officer, Gumla vide Letter No. 1072/M, dated 25.08.2015. ii. Mining scheme approved by DMO, Gumla vide letter no. 1123/M, dated 28.10.2021.
9	Previous EC	:	Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA/ 2016-17/ 0013/2017/11, dated 25.03.2017.
10	Compliance report of EC	:	EC compliance report issued by JSPCB, Regional Office, Dhurwa vide letter no. 99, dated 20.01.2025.
11	Production Report	:	Production report issued by DMO, Gumla vide memo no. 883/M dated 28.10.2024.
12	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2012003 /2018 /52, dated 09.01.2018.
13	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. JSPCB/RO/RNC/CTO-10880771 /2022/179, dated 16.08.2022.
14	Qualified Person	:	Dr. Amarjeet Kumar Singh through e-mail dated 08.03.2025 affirmed that the mine plan prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	1.618 Ha / 4.00 Acres	Life of Mine – Up to the lease period i.e. 04.11.2017 to 03.11.2027.
3	Waste Generation	:	4206 cum	
4	Stripping Ratio	:	1:0.05	
5	Working Days	:	300	
6	Benches: size & No	:	3m to 3m	
7	Elevation of Mine	:	573 m AMSL to 549m AMSL	
8	Ground Level Elevation	:	573m AMSLto 555m AMSL	
9	Ultimate Working Depth	:	549m AMSL	
10	Water Table	:	25-30 meter below the ground level.	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	15kg/day	
13	Diesel/Fuel requirement	:	363litre/day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Removal of gritty soil in cum
1st	16800	50,400.00	Nil
2nd	16800	50,400.00	Nil
3rd	16800	50,400.00	Nil
4th	16800	50,400.00	Nil
5th	16800	50,400.00	Nil
Total	**84000**	**252,000.00**	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (in Ha)
Barren land	1.368	Nil	Nil
Crusher	Nil	Nil	Nil
Quarry	0.210	1.168	Reclaimed
Road	0.01	0.01	0.01
Reclaimed Area	Nil	Nil	1.168
Overburden dump	Nil	Nil	Reclaimed
Mineral Storage	Nil	Nil	Nil
Infrastructure	Nil	0.02	Nil
Approach roads	0.03	0.03	0.03
Garland drain	Nil	0.04	Nil
Green belt	Nil	0.33	0.41
Settling tank	Nil	0.02	Nil
Area which will remain untouched	1.368	Nil	Nil
Total	**1.618**	**1.618**	**1.618**

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	528	3300	0.33	Gulmohar, Gular, Sagwan, Sakua Fruit Bearing Trees Mango, Jackfruit, Guava
	Haul Road	3 x 3	00	00	00	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			**528**	**3300**	**0.33**	

- 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)	0	4.54
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 528 x 300Rs.	1.584	0.26
03	Garland Drain and Desiltation pond	1.618	0.116
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**3.202**	**5.416**

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.	2 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 first, second and third year gritty soil & intercalated waste will be removed (4206m^3) this soil and waste will be temporarily backfill within the exhausted quarry and inremoved gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (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

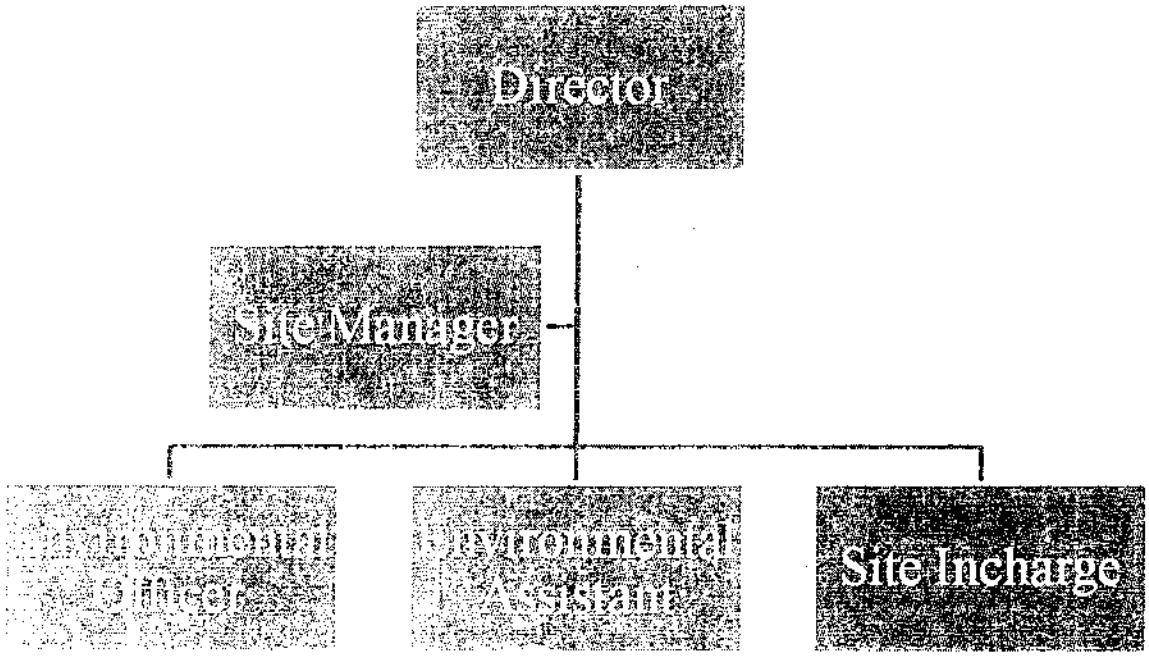
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP

- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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 Basia Stone Deposit of Shri Manoj Kumar Jaiswal, Village : Basia, Tehsil : Basia, Distt. : Gumla, Jharkhand (1.618 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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11. Kasira Stone Mine of Shri Rambilas Sahu, Village : Kasira, Tehsil & Thana : Gumla, Distt. : Gumla, Jharkhand (0.404 Ha).

(Proposal no.: SIA/JH/MIN/ 511967 /2024)

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

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

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

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA/ 2017-18/ 36/2017/32 GML, dated 14.09.2017.

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, Gumla which has been taken up for consideration on 08.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 184/M dated 11.02.2025 by DMO, Gumla is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 50, dated 13.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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–24.32Tonnes Per day or 7295 tonnes per year
Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kasira Stone Mine	
2	Lessee:	:	Sri Rambilas Sahu	
3	Lessee Address	:	Village –Kasira, P.O – Patia, P.S – Gumla, District – Gumla, Jharkhand	
4	Lease Area	:	0.404 Ha	Acres- 1.00 Acre
5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital: 3.90 Lakhs	Recurring: 44.94 lakhs / year
7	EMP Budget	:	Capital: 7.07Lakhs	Recurring: 2.54lakhs / year
8	New or Expansion	:	Re-appraisal	
9	Mineable Reserves	:		Tonnes: 39041.22tonnes
10	Mine Life	:	Up to the lease period i.e. 02.11.2017 to 02.10.2027.	
11	Man power	:	18	
12	Water Requirement	:	3.16 KLD (Drinking: 0.6KLD, Industrial:1.6KLD, Plantation: 0.96 KLD)	
13	Water Source	:	By authorised hired water tankers	
14	DG Set / power	:	-	
15	Crusher	:	No crusher	
16	Nearest Water	:	South Koel River is situated at a distance of 5.0 kmin East	

	Body		direction.
17	Nearest Habitation	:	Kasira village at a distance of 1.0 Km.
18	Nearest Rail Station	:	LohardagaRailway station, approx. 45km.
19	Nearest Air Port	:	Birsa Munda Airport, Ranchiat a distance of 100 km.
20	Nearest Forest	:	Open mixed forest at a distance of 1.7 km in North-East direction.
21	Road & Highways	:	Nearest National Highway, Approx. 1.3km.

CO-ORDINATES

S. No.	Latitude	Longitude
1	23°02'15.86" N	84°40'12.78"E
2	23°02'15.53" N	84°40'13.53"E
3	23°02'15.15" N	84°40'14.39"E
4	23°02'14.75" N	84°40'15.31"E
5	23°02'14.01" N	84°40'14.93"E
6	23°02'13.26" N	84°40'14.54"E
7	23°02'13.62" N	84°40'13.72"E
8	23°02'13.99" N	84°40'12.84"E
9	23°02'14.35" N	84°40'12.01"E
10	23°02'15.03" N	84°40'12.36"E

LAND DETAILS

Khata no.	Plot no.
255	1606 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DC, Gumla vide letter no. 1209/M, dated 14.12.2016. ii. Lease deed : 02.11.2017 to 02.10.2027.
2	CO	:	The CO, Gumla (Sadar) vide letter no. 105, dated 03.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 183/M, dated 11.02.2025 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. 71, dated 25.01.2024 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. 424, dated 30.01.2024 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 Gumla District (Sl. no. 09, Page no. 41).
7	Gram Sabha	:	BDO, Gumla vide letter no. 3082, dated 29.06.2011 informed that Gram Sabha conducted on 27.06.2011.
8	Mining Scheme / Mine Plan Approval	:	i. Mine plan approved by Assistant Mining Officer, Gumla vide Letter No. 1302/M, dated 31.12.2016. ii. Mining scheme approved by DMO, Gumla vide letter no. 46/M, dated 11.01.2024.
9	Previous EC	:	Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA/ 2017-18/ 36/2017/32 GML, dated 14.09.2017.
10	Compliance report of EC	:	EC compliance report issued by JSPCB, Regional Office, Dhurwa vide letter no. 50, dated 13.01.2025
11	Production Report	:	Production report issued by DMO, Gumla vide memo no. 184/M dated 11.02.2025.
12	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2018186 /2018 /1035, dated 05.10.2018.
13	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. JSPCB/RO/RNC/CTO-14453352 /2022/218, dated 19.10.2022.
14	Qualified Person	:	The mining scheme has been prepared by Shri Surendra Sai. He was present in the meeting.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	0.404 Ha / 1.00 Acres	Life of Mine – Up to the lease period i.e. 02.11.2017 to

				02.10.2027.
3	Waste Generation	:	223.91 cum	
4	Stripping Ratio	:	1:0.005	
5	Working Days	:	300	
6	Benches: size & No	:	3m to 3m	
7	Elevation of Mine	:	589 m AMSL to 578m AMSL	
8	Ground Level Elevation	:	590m AMSLto 585m AMSL	
9	Ultimate Working Depth	:	578m AMSL	
10	Water Table	:	570m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	20.3kg/day	
13	Diesel/Fuel requirement	:	121litre/day	

Production Details

Year	Production of Stone in Cum	Recovery stone 98% cum	Recovery waste 2% cum	Tonnage stone (cum x 2.7)
1st	1320.50	1294.10	26.41	3494.04
2nd	2757.00	2701.90	55.14	7295.00
3rd	2756.90	2701.70	55.10	7294.70
4th	2756.80	2701.70	55.10	7294.49
5 th	1608.00	1575.80	32.16	4254.76
Total	**11199.20**	**10975.20**	**223.91**	**29632.99**

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.14	0.23	0.23 (0.23 Ha area shall be left as water reservoir for rain water harvesting)
Waste Dump	Nil used for road constructions	Nil used for road constructions	Nil used for road constructions
Road	-	Within excavation area	Within excavation area

Infrastructure	-	Nil	Nil
Safety Zone		0.17	0.17
Total	**0.14 (unused – 0.26 Ha)**	**0.40**	**0.40**

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	00	00	00	Gulmohar, Gular, Sagwan, Sakua Fruit Bearing Trees Mango, Jackfruit, Guava
	Haul Road	3 x 3		1000	0.01	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			**816**	**4200**	**0.42**	

- 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)	0	3.66
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and	2.44	0.40

	fences) @ No. of plants 816 x 300Rs.		
03	Garland Drain and Desiltation pond	0.404	0.14
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**3.90**	**4.719**

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.	2 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 first, second and third year gritty soil & intercalated waste will be removed (136.65m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in fourth year (55.10m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 avoidsuspension of dust.

- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (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

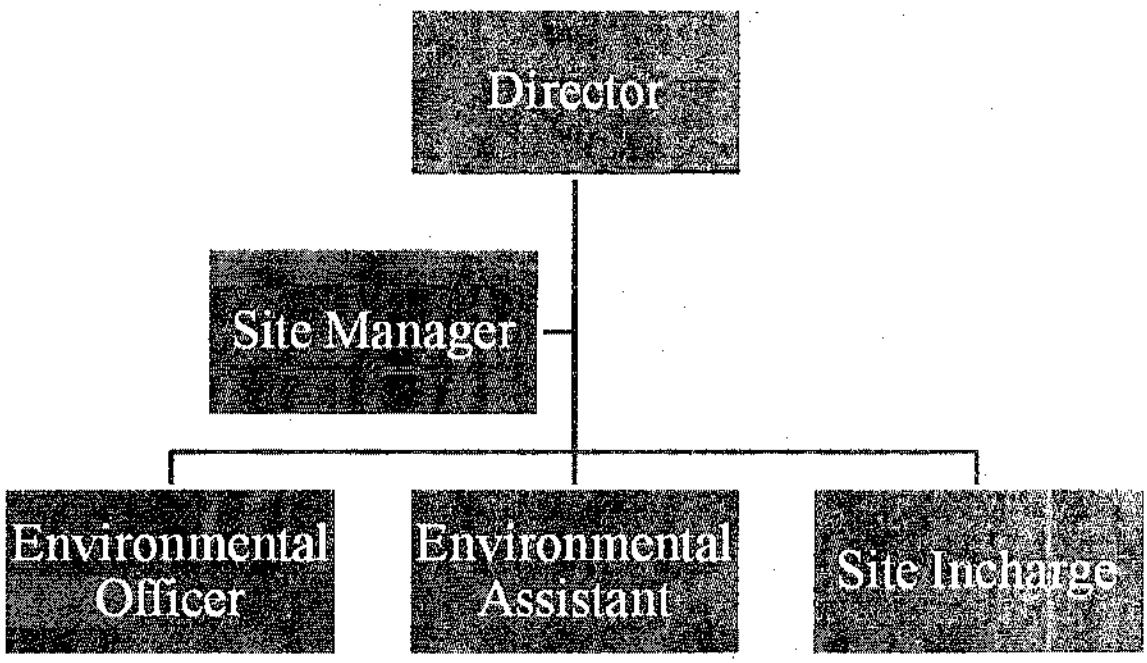
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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 Kasira Stone Mine of Shri Rambilas Sahu, Village : Kasira, Tehsil & Thana : Gumla, Distt. : Gumla, Jharkhand (0.404 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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12. Ulatu Stone Mine of Shri Niraj Kumar Singh, Village : Ulatu, Tehsil : Namkum, Distt. : Ranchi, Jharkhand (2.77 Ha).

(Proposal no.: SIA/JH/MIN/ 527001 /2025)

Project Authority vide e-mail dated 07.03.2025 requested for deferment of the proposal. Hence, the proposal was deferred to next meeting.

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13. Ulatu Stone Deposit of Shri Niraj Kumar Singh, Village : Ulatu, Tehsil : Namkum, Distt. : Ranchi, Jharkhand (1.347 Ha).

(Proposal no.: SIA/JH/MIN/ 526968/2025)

Project Authority vide e-mail dated 07.03.2025 requested for deferment of the proposal. Hence, the proposal was deferred to next meeting.

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14. Chando Stone Mine of Shri Rajib Ranjan & Others, Village : Chando, Tehsil : Chando, Thana : Chainpur, Distt. : Palamau, Jharkhand (3.00 Ha).

(Proposal no.: SIA/JH/MIN/ 511928 /2024)

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

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

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/24, dated 29.05.2017.

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, Palamau which has been taken up for consideration on 08.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ · 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 dated 26.12.2024 by DMO, Palamau, Medininagar is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide memo no. 814, dated 11.07.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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–504Tonnes/Day

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chando Stone Mine	
2	Lessee:	:	M/s Rajib Ranjan and Partners	
3	Lessee Address	:	Village –Abadganj, P.O – Daltonganj, District – Palamu, Jharkhand	
4	Lease Area	:	3.00 Ha	Acres- 7.42 Acre
5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital: 9.752 Lakhs	Recurring: 47.65 lakhs / year
7	EMP Budget	:	Capital: 2.752 Lakhs	Recurring: 5.42 lakhs / year
8	New or Expansion	:	Re-appraisal of DEIAA EC	
9	Mineable Reserves	:	713787 cum	Tonnes: 1998662.00tonnes
10	Mine Life	:	Up to the lease period i.e. 07.12.2017 to 06.12.2027.	

11	Man power	:	43
12	Water Requirement	:	21.72KLD (Drinking: 1.72KLD, Industrial:9.0KLD, Plantation: 11KLD)
13	Water Source	:	By authorised hired water tankers
14	DG Set / power	:	-
15	Crusher	:	No crusher
16	Nearest Water Body	:	
17	Nearest Habitation	:	Chando, at a distance of 0.5 Km in East direction.
18	Nearest Rail Station	:	DaltonganjRailway station, approx. 11.56km towards North direction
19	Nearest Air Port	:	Birsa Munda Airport, Ranchiat a distance of 150 km in SouthEast direction.
20	Nearest Forest	:	None
21	Road & Highways	:	SH –23 at a distance of ENE direction.

CO-ORDINATES

S. No.	Latitude	Longitude
1	23°56'26.88" N	84°06'28.19"E
2	23°56'29.83" N	84°06'18.84"E
3	23°56'31.02" N	84°06'18.63"E
4	23°56'30.52" N	84°06'19.31"E
5	23°56'30.52" N	84°06'23.35"E
6	23°56'34.50" N	84°06'23.80"E
7	23°56'35.42" N	84°06'23.69"E
8	23°56'37.31" N	84°06'24.98"E
9	23°56'37.47" N	84°06'25.74"E
10	23°56'35.41" N	84°06'25.75"E
11	23°56'30.31" N	84°06'25.49"E
12	23°56'29.14" N	84°06'28.68"E

LAND DETAILS

Khata no.	Plot no.
347	2129 & 2066

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DMO, Palamau, Medininagar vide letter no. 2148/M, dated 10.11.2016. ii. Lease deed : 07.12.2017 to 06.12.2027.
2	CO	:	The CO, Chainpur, Palamau vide letter no. 42, dated 20.01.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Palamau, Medininagar vide memo no. 1180/M, dated 03.06.2024 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. 310, dated 03.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Forest Distance	:	Division Forest Officer, Medininagar Forest Divisioin vide letter no. 3794, dated 24.09.2016 certified that the distance of forest land is more than 250 meter from proposed project boundary.
6	DSR	:	This project is mentioned in approved DSR of Palamau District (Sl. no. 30, Page no. 71).
7	Gram Sabha	:	Gram Sabha conducted on 20.10.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by Additional Director, Geology, Hazaribag vide Memo No. 73/G, dated 08.06.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/24, dated 29.05.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide memo no. 814, dated 11.07.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2064213 /2018 /376, dated 13.04.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-8186572 /2020/107, dated 26.06.2020.
13	Production Report	:	Production report issued by DMO, Palamau, Medininagar vide memo dated 26.12.2024

14	Qualified Person	:	The mining scheme has been prepared by Shri B. Tirkey. As he has since deceased, he was not present in the meeting.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	3.00 Ha / 7.42 Acres	Life of Mine – Up to the lease period i.e. 07.12.2017 to 06.12.2027.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	01:01	
5	Working Days	:	300	
6	Benches: size & No	:	5m to 5m	
7	Elevation of Mine	:	271 m AMSL to 256 m AMSL	
8	Ground Level Elevation	:	274m AMSLto 267m AMSL	
9	Ultimate Working Depth	:	256m AMSL	
10	Water Table	:	250meter below the ground level.	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	15kg/day	
13	Diesel/Fuel requirement	:	363litre/day	

Production Details

Year	90% Stone Production inn Tonnes	10% Murram production in Tonnes
Year (2022-2023)	151198	16800
Year (2023-2024)	151146	16794
Year (2024-2025)	151194	16799
Year (2025-2026)	151195	16799
Year (2026-2027)	151146	16794
Total	**755878**	**83986**

Land Use

Pattern of Utilization	Existing Land Use (Ha)	Proposed current plan period (Ha)	At the end of Plan period (Ha)	Land Usage at Conceptual stage (in Ha)
Mining area	1.16	1.70	2.02	Water body
Office/Store	0.05	0.05	0.05	-
Road	0.10	0.10	0.10	-
Dump Yard	0.00	0.00	0.00	-
Garland Drain	0.83	0.83	0.83	Plantation
Safety Zone				
Settling tank				
Unutilized	0.86	0.32	0.00	-
Total	**3.00**	**3.00**	**3.00**	**-**

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	1328	8300	0.83	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	00	00	00	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			**1328**	**8300**	**0.83**	

- 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)	0	4.54
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 1328 x 300Rs.	3.98	0.66
03	Garland Drain and Desiltation pond	3.00	0.116
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**6.98**	**5.816**

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.	2 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 first, second and third year gritty soil & intercalated waste will be removed (4206m^3) this soil and waste will be temporarily backfill within the exhausted quarry and inremoved

gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

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 adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 smoothtransportation.
- 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 avoidsuspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loadingpoints, 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

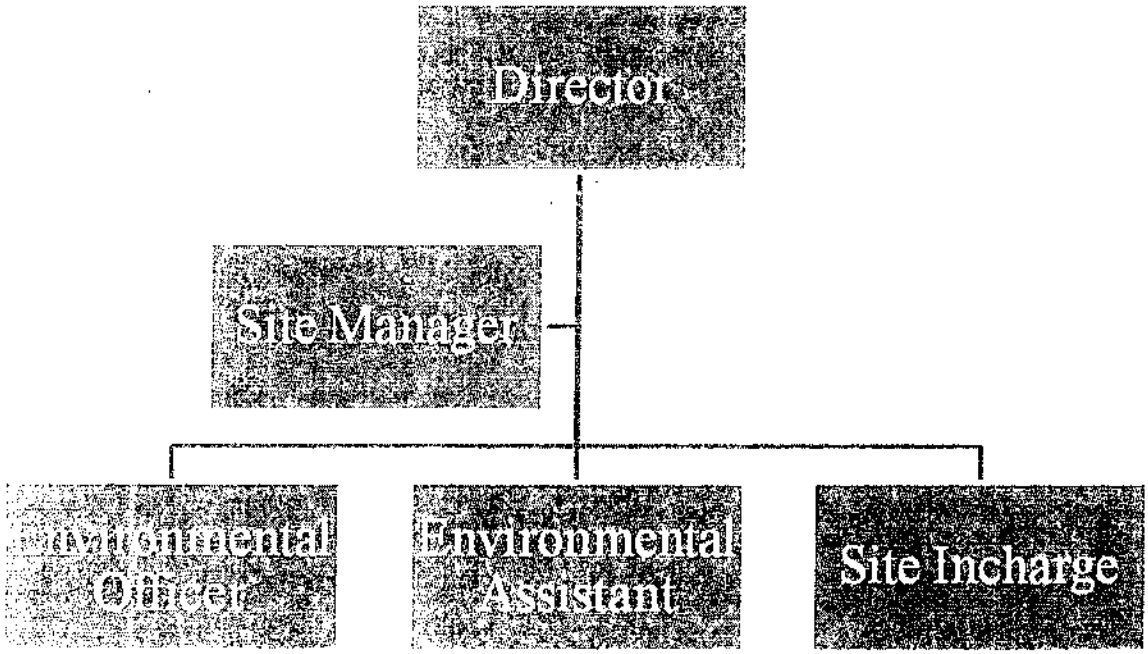
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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 Chando Stone Mine & Murram of Shri Rajib Ranjan & Others, Village : Chando, Tehsil : Chando, Thana : Chainpur, Distt. : Palamau, Jharkhand (3.00 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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15. Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Bhagwan Bhagat), Village : Kordar, Tehsil : Sahibganj, Distt. : Sahibganj, Jharkhand (2.835 Ha).

(Proposal no.: SIA/JH/MIN/ 521715 /2025)

The PA vide letter dated 08.03.2025 requested for withdrawal of the proposal. Hence, the Committee recommends for withdrawal of the project proposal.

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16. Mundli Stone Mine of M/s Maa Vaishnavi Stone Works (Prop. : Shri Rajesh Kumar Jaiswal), Village : Mundli, Tehsil : Mandro, Thana : Mirjachoki Distt. : Sahibganj, Jharkhand (2.22 Ha).

(Proposal no.: SIA/JH/MIN/ 509973 /2024)

Name of the consultant : Crystal Cosultants, 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/2016-17/40, dated 26.09.2016.

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, Sahibganj which has been taken up for consideration on 08.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 633/M, dated 15.07.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 1710, dated 29.08.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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–500Tonnes/Day or 147204Tonnes/Annum

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Mundli Stone Mine	
2	Lessee:	:	M/s Maa Vaishnavi Stone Works Proprietor : Sri Rajesh Kumar Jaiswal	
3	Lessee Address	:	Mahadevbaran, P.O. & P.S. : Mirzachouki, Sahebganj, Jharkhand	
4	Lease Area	:	2.22 Ha.	5.50 Acres
5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital : Rs. 11,38,600	Recurring : Rs. 1,95,17,800
7	EMP Budget	:	Capital: Rs. 4,38,600	Recurring: Rs. 4,83,300
8	New or Expansion	:	Re-appraisal of DEIAA EC	
9	Mineable Reserves	:	cum.:5,46,251.85	Tonnes: 14,74,880.00
10	Mine Life	:	Up to the lease period i.e. 06.10.2016 to 05.10.2026.	
11	Man power	:	23	
12	Water Requirement	:	10.920 KLD including Domestic (0.920 KLD), Water Sprinkling (5.00 KLD) & Green Belt (5.00 KLD)	
13	Water Source	:	By authorised hired water tankers	
14	DG Set / power	:	-	
15	Crusher	:	*No crusher*	
16	Nearest Water Body	:	*Ganga River (10.69 Km)*	
17	Nearest Habitation	:	*Mirzacheuki (1.70 Km)*	
18	Nearest Rail Station	:	*Sahibganj Railway Station (25 Km)*	
19	Nearest Air Port	:	*Deoghar Airport (122 Km)*	
20	Nearest Forest	:	*530 m*	
21	Road & Highways	:	*Sahibganj – Rajmahal Road (3 Km)*	

CO-ORDINATES

Sl. No.	Latitude	Longitude
1	25°14'35.10"	87°29'43.27"
2	25°14'33.63"	87°29'46.76"
3	25°14'33.92"	87°29'51.40"
4	25°14'31.02"	87°29'50.64"
5	25°14'31.65"	87°29'47.32"
6	25°14'30.67"	87°29'46.78"
7	25°14'32.38"	87°29'43.30"
8	25°14'33.75"	87°29'41.58"

LAND DETAILS

Khata no.	Plot no.
17	55 & 56

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 06.10.2016 to 05.10.2026.
2	CO	:	The CO, Mandro vide memo no. 431/Ra., dated 22.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid certificate	:	DMO, Sahibganj vide memo no. 373/M, dated 27.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site falls under Grid 1 and production is within the over all permissible production limit.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 517, dated 11.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 2259, dated 15.12.2015 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. 08, Page no. 129).
7	Gram Sabha	:	Gram Sabha conducted on 04.10.2015.
8	Scheme / Mine Plan Approval	:	i. Mining plan approved by DMO, Sahibganj vide Letter No. 4204, dated 20.12.2015. ii. Mining scheme approved by DMO, Sahibganj vide letter no. 1190/M, dated 02.11.2020.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/40, dated 26.09.2016.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 1710, dated 29.08.2024.
11	Consent to	:	CTE issued by JSPCB vide Ref. No. JSPCB/HO/RNC/CTE-11144964

	Establish (CTE)		/2017/18, dated 16.01.2017.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. No. JSPCB/HO/RNC/CTO-21202771 /2015/103, dated 10.01.2025.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 633/M, dated 15.07.2024.
14	Qualified Person	:	Shri J.P. Bhattacharya vide letter dated 08.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	1.670 Ha.	Life of Mine – Up to the lease period i.e. 06.10.2016 to 05.10.2026.
3	Waste Generation	:	0 Cum	
4	Stripping Ratio	:	1:0.00	
5	Working Days	:	300	
6	Benches: size & No	:	3m to 3m	
7	Elevation of Mine	:	164m AMSL to 180m AMSL	
8	Ground Level Elevation	:	163m AMSL	
9	Ultimate Working Depth	:	148m AMSL	
10	Water Table	:	115m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	20.3 kg/day	
13	Diesel/Fuel requirement	:	121 litres/day	

Production Details

Year	Production of Stone in Tonnes	Overburden in Cum	Intercalated Waste in Cum	Total Waste in CUm
6th	147123	0	0	0
7th	147123	0	0	0
8th	147042	0	0	0
9th	147204	0	0	0
10th	147058	0	0	0

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	At the end of life of Mine (Ha.)	Conceptual stage (Ha) (after life of mine)		
				Waterbody	Plantation	Public Use
Quarry	1.572	1.562	1.670	1.670	--	--
Road	0.020	0.010	0.005	0.005	--	--
Safety Zone	0.545	0.545	0.545	--	0.545	--
Total	**2.137**	**2.117**	**2.220**	**1.675**	**0.545**	**0.00**
Unused Area	**0.083**	**0.103**	**0.000**	**0.000**		
Total Applied Area	**2.220**	**2.220**	**2.220**	**2.220**		

ENVIRONMENT MANAGEMENT

Green Belt Development

Safety Zone (Ha.)	No. of Tree @ 1600 per Ha.	Actual Existing tree on site	Proposed to be done within 6 months
0.545	872	150	722

- 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 BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
Particulars	**Capital (INR)**	**Recurring (INR)**
722 Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance	2,16,600	36,100
Water Tanker @Rs. 500 per Tanker for Dust Suppression (5KLD) & Horticulture (5KLD) 10 X 300 Days = 3000 Days 3000 / 4 = 750 Tankers	0	3,75,000
Garland Drain & Parapet wall	2,22,000	22,200

Environment Monitoring & Compliance	0	50,000
Total	**4,38,600**	**4,83,300**

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.	2 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

There is no generation of Solid Waste.

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
- 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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

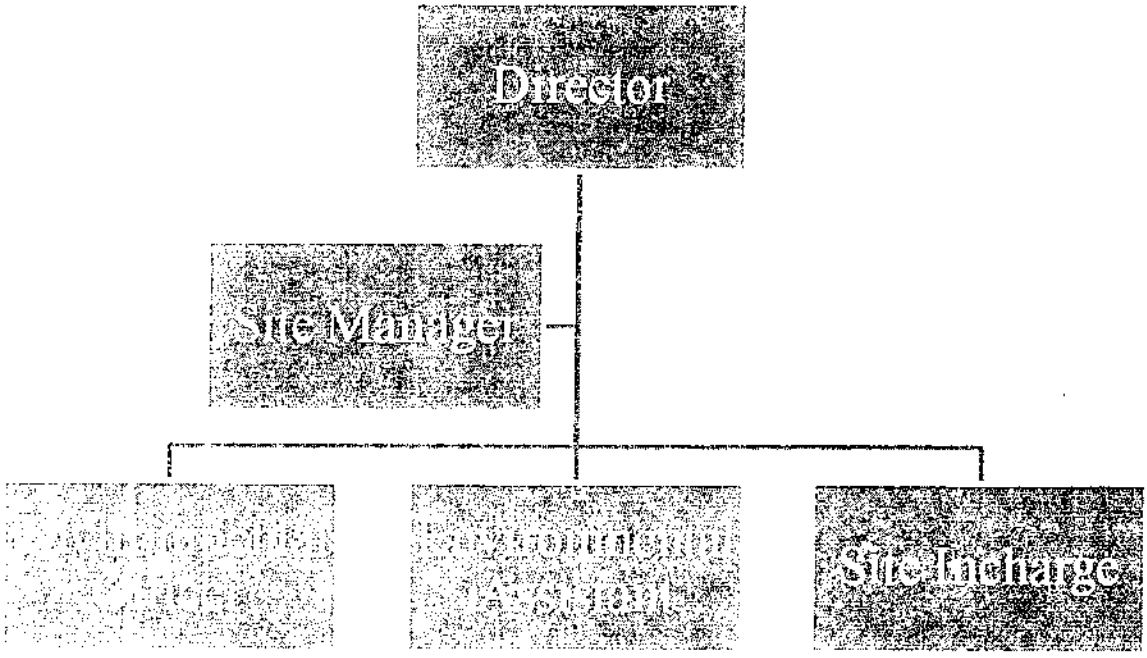
The EMP Cell objectives are:

- 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



Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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

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 Mundli Stone Mine of M/s Maa Vaishnavi Stone Works (Prop. : Shri Rajesh Kumar Jaiswal), Village : Mundli, Tehsil : Mandro, Thana : Mirjachoki Distt. : Sahibganj, Jharkhand (2.22 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 "*EkPed Ma KeNaam*" 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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17. Belbhadri Stone Mine of M/s Jai Maa Bhagwati Stone Works (Partner : Shri Hiralal Bhagat), Village : Belbhadri, Tehsil & Thana : Mirjachoki Distt. : Sahibganj, Jharkhand (2.025 Ha).

(Proposal no.: SIA/JH/MIN/ 509552 /2024)

Name of the consultant : Crystal Cosultants, 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/2016-17/84, dated 13.12.2016.

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, Sahibganj which has been taken up for consideration on 08.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 630/M, dated 15.07.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 1711, dated 29.08.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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–350Tonnes/Day or 104922Tonnes/Annum

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Belbhadri Stone Mine	
2	Lessee:	:	M/s Jai MaaBhagawati Stone Works Proprietor : Sri Hiralal Bhagat	
3	Lessee Address	:	Mahadevbaran, P.O. & P.S. Mirzachouki, Sahebganj, Jharkhand	
4	Lease Area	:	2.025 Ha.	5.00 Acres
5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital : Rs. 11,39,500	Recurring : Rs. 1,49,16,250
7	EMP Budget	:	Capital: Rs. 4,39,500	Recurring: Rs. 4,84,750
8	New or Expansion	:	Re-appraisal	
9	Mineable Reserves	:	cum.:3,92,415.18	Tonnes: 10,59,521.00
10	Mine Life	:	Up to the lease period i.e. 26.09.2016 to 25.09.2026.	
11	Man power	:	21	
12	Water Requirement	:	10.840KLD *(including 0.840KLD Domestic, 5.00 KLD for Horticulture &5.00 KLD Dust Suppression)*	
13	Water Source	:	By authorised hired water tankers	
14	DG Set / power	:	-	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Ganga River (10.80 Km)	
17	Nearest Habitation	:	Mirzacheuki (1.70 Km)	
18	Nearest Rail Station	:	Sahebganj Railway Station (14.30 Km)	
19	Nearest Air Port	:	Deoghar Airport (122 Km)	
20	Nearest Forest	:	530 m	
21	Road & Highways	:	Sahibganj – Rajmahal Road (3 Km)	

CO-ORDINATES

Sl. No.	Latitude	Longitude
1	25°14'30.7"	87°29'32.1"
2	25°14'27.9"	87°29'30.4"
3	25°14'30.3"	87°29'25.9"
4	25°14'36.2"	87°29'24.7"
5	25°14'34.3"	87°29'32.3"

LAND DETAILS

Khata no.	Plot no.
22	170 (P)
23	171 (P)
17	172 (P)
26	177
01	178
11	190 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 26.09.2016 to 25.09.2026.
2	CO	:	The CO, Mandro vide memo no. 586/Ra., dated 29.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid certificate	:	DMO, Sahibganj vide memo no. 371/M, dated 27.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that proposed project site falls under Grid 1 and production is within the over all permissible production limit.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 3172, dated 06.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide letter no. 1703, dated 02.09.2015 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. 131, Page no. 144).
7	Gram Sabha	:	Gram Sabha conducted on 08.01.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Sahibganj vide letter no. 1191/M dated 02.11.2020.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/84, dated 13.12.2016.

10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 1711, dated 29.08.2024.\
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2175203 /2018 /497, dated 11.05.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-20525029 /2024/1798, dated 27.11.2024.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 630/M, dated 15.07.2024.
14	Qualified Person	:	Shri J.P. Bhattacharya vide letter dated 08.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	1.151 Ha.	Life of Mine – Up to the lease period 26.09.2016 to 25.09.2026.
3	Waste Generation	:	0 Cum	
4	Stripping Ratio	:	1:0.00	
5	Working Days	:	300	
6	Benches: size & No	:	3m to 3m	
7	Elevation of Mine	:	195m AMSL to 140m AMSL	
8	Ground Level Elevation	:	140m AMSL	
9	Ultimate Working Depth	:	122m AMSL	
10	Water Table	:	115m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	20.3 kg/day	
13	Diesel/Fuel requirement	:	121 litres/day	

Production Details

Year	Production of Stone in Tonnes	Overburden in Cum	Intercalated Waste in Cum	Total Waste in CUm
6th	104874	0.0	0.0	0.0
7th	104906	0.0	0.0	0.0

8th	104857	0.0	0.0	0.0
9th	104858	0.0	0.0	0.0
10th	104922	0.0	0.0	0.0
Total	**524417**	**0.0**	**0.0**	**0.0**

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	At the end of life of Mine (Ha.)	Conceptual stage (Ha) (after life of mine)		
				Waterbody	Plantation	Public Use
Quarry	0.530	1.000	1.151	1.151		
Road	0.010	0.010	0.010	0.010		
Safety Zone	0.600	0.600	0.600		0.600	
Total	**1.140**	**1.610**	**1.761**	**1.161**	**0.600**	**0.00**
Unused Area	**0.885**	**0.415**	**0.264**	**0.264**		
Total Applied Area	**2.025**	**2.025**	**2.025**	**2.025**		

ENVIRONMENT MANAGEMENT

Green Belt Development

Safety Zone (Ha.)	No. of Tree @ 1600 per Ha.	Actual Existing tree on site	Proposed to be done within 6 months
0.600	960	170	790

- 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

BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
Particulars	**Capital (INR)**	**Recurring (INR)**
790 Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance	2,37,000	39,500
Water Tanker @Rs. 500 per Tanker for Dust Suppression	0	3,75,000

(5.00KLD) & Horticulture (5.00 KLD) 5.00 KLD + 5.00 KLD = 10.00 KLD 10.00KLD X 300 Days =3000 KL 3000 KLD / 4 KLD = 750 Tankers		
Garland Drain & Parapet wall	2,02,500	20,250
Environment Monitoring & Compliance	0	50,000
Total	**4,39,500**	**4,84,750**

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 Quallty at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 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

There is no generation of Solid Waste.

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	Very Unlikely	Minor	20

		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

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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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

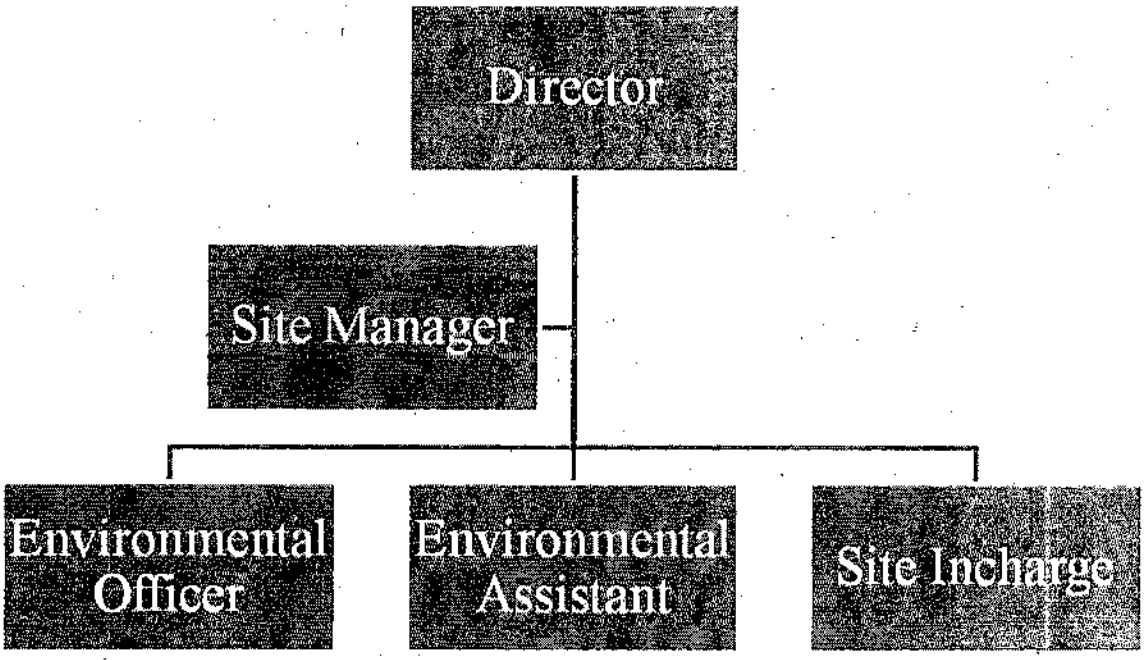
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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

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 Belbhadri Stone Mine of M/s Jai Maa Bhagwati

Stone Works (Partner : Shri Hiralal Bhagat), Village : Belbhadri, Tehsil & Thana : Mirjachoki Distt. : Sahibganj, Jharkhand (2.025 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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.

****

Day 2 : March 09th, 2025 [Sunday]

Consideration of Proposals

1. **Brick Clay Mining Project of M/s S.P.K. Chimni Bhatta Bricks (Partners : Shri Prasenjit Ghosh & Chiranjit Ghosh), Village : Juridangal, Distt. : Jamtara, Jharkhand (1.62 Ha).**

   (Proposal no.: SIA/JH/MIN/ 506857 /2024)

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

   This is a new project which has been taken for appraisal on 09.03.2025.

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

   Application for Environmental Clearance (EC).

   EC Application for: Proposed Capacity: 1584 cum / 6 lakh brick per annum.

   Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	M/S S.P.K. CHIMNI BHATTA BRICKS	
2	Lessee:	:	Shri Prasenjit Ghosh & Shri Chiranjit Ghosh R/o-Sagjuria road, Gopalpur, Nala, District- Jamtara, 815355	
3	Lessee Address	:	R/o-Sagjuria road, Gopalpur, Nala, District- Jamtara, 815355	
4	Lease Area	:	1.62 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 14.85 Lakh	
7	EMP Budget	:	Capital Cost: Rs. 4.9 Lakhs	Recurring Cost: Rs. 2.65 Lakhs
8	CSR / CER Budget	:	0.80 Lakhs	
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 19360 cum	
10	Mine Life	:	As Per the Lease Period.	
11	Man power	:	23 Person	
12	Water Requirement	:	3.810 KLD (Drinking:0.46 KLD, Dust Suppression: 0.920KLD, Plantation: 2.430 KLD	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Ajay River – 1 km – SW direction. (aerial distance)	

17	Nearest Habitation	:	Juridangal – 0.90 km in the E direction.
18	Nearest Rail Station	:	Chitranjan Railway Station : 12 Km SW
19	Nearest Air Port	:	Gaya International Airport is at areal distance of 112.50 km NE direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Medninagar. letter no.- 2070 Dated: 10.07.2024
21	Road & Highways	:	Road. of MOR Mathura to Murgabani– 1 Km

CO-ORDINATES

Sl. No.	Latitude	Longitude
1	23°52'33.04"N	86°59'7.45"E
2	23°52'33.30"N	86°59'11.63"E
3	23°52'31.96"N	86°59'12.03"E
4	23°52'29.80"N	86°59'10.81"E
5	23°52'28.1 O"N	86°59'8.65"E
6	23°52'28.43"N	86°59'6.36"E

LAND DETAILS

Khata no.	Plot no.
05	988, 1007 & 1009
33	987, 989 & 1002

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	0.78 Ha	Life of Mine – As Per The Lease Period.
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	00:00	
5	Working Days	:	200	
6	Benches: size	:	4 m x 4 m	
7	Elevation of Mine	:	640 – 150 AMSL	
8	Ground Level Elevation	:	150 AMSL	
9	Water Table	:	Nil	
10	Topography of Mine	:	Area represents gently sloping land.	

Production Details

Year	Production of clay in cum	Production of clay in Tonnes	Production of No. of Bricks Block (Lakh)
1st	1560	2340	600000
2nd	1560	2340	600000
3rd	1560	2340	600000
4th	1560	2340	600000
5th	1560	2340	600000
Total	**7800**	**11700**	**3000000**

Land Use pattern

SL	Pattern	Existing Land Use (Ha)	Conceptual plan for plan period (Ha)
1	Quarrying	0.000	0.78
2	Safety Barrier / Berm Area	0.000	0.40
3	Road	0.00	0.02
4	Dump or Soil Stacked	0.00	0.01
5	Office Or rest Shelter	0.00	0.01
6	unutilized	1.62	0.4
	TOTAL	**1.62**	**1.62**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone, Dumping Area, Unutilized Area, and Office Area.		0.4 Ha	345
2	Along Approach Road		380 m	230
TOTAL				**575**

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Nala vide letter no. 1684/Ra., dated 27.08.2019 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Jamtara vide memo no. 782/M, dated 03.12.2024 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. 202, dated 15.02.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Jamtara Forest Division vide letter no. 910, dated 27.05.2019 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. 121, Page no. 206).
7	Gram Sabha	:	Gram Sabha conducted on 17.05.2019.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Letter No. 02/DDM, dated 08.01.2020.
9	Qualified Person	:	The mining plan has been prepared by Shri B. Tirkey. As he has since deceased, he was not present in the meeting.

- **Budget for Environmental Management**

Sl. No.	ITEM DESCRIPTION	Capital Investment (INR in Lakhs)	Recurring Cost/Yr. (INR in Lakhs)
1	Water Sprinkling & Dust Suppression	2.30	1.15
2	Green Belt & Plantation	2.0	0.45
3	Pit leveling	0.9	0.15
TOTAL		5.2	1.75
4. Environmental Monitoring			

4. a	Air Quality Monitoring –twice a year	0.45	
4. b	Water Quality Monitoring twice a year	0.23	
4.c	Noise level Monitoring twice a year	0.22	
TOTAL		0.9	
GRAND TOTAL		5.2	2.65

CER – BUDGET

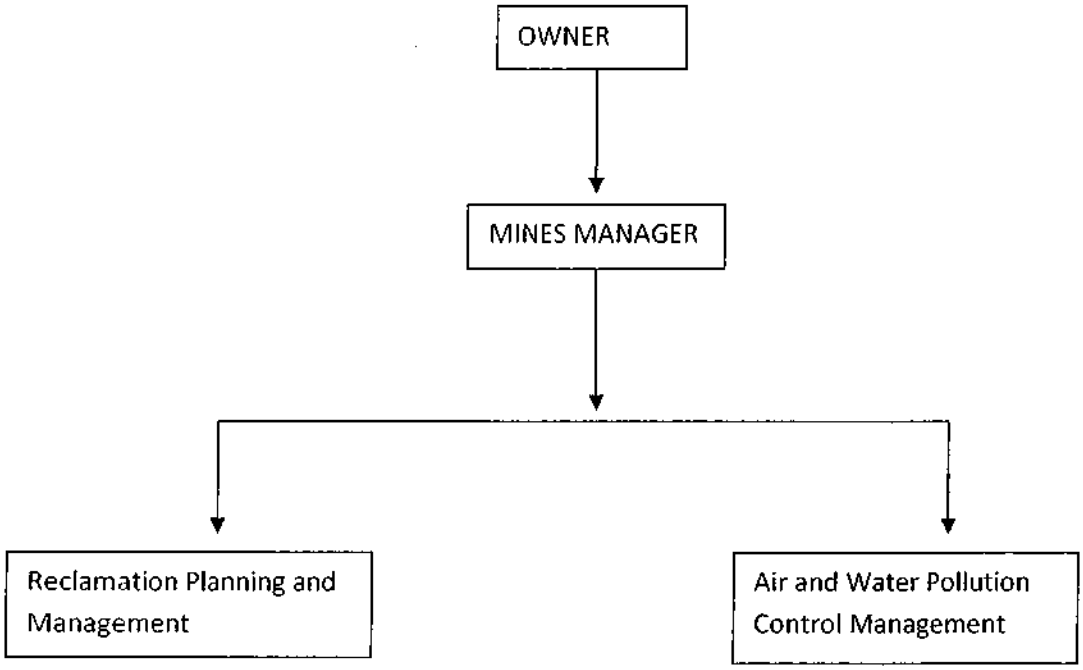
The proposed program of peripheral developmental activity is:

- **Allocation of funds for CER activities – Rs 0.80 Lacs during project period**
- **Funds will be in addition to investment for implementation of EMP.**
- **The reach for the CER activities would be Education; Health & Water**

Activity and Implementation Target	Capital Cost (in Rs.)
<u>Health</u> ▪ Health Awareness and Checkup with free supply of medicines. ▪ Specific Programmes for hygiene and sanitation.	30,000/-
<u>Education</u> ▪ Targeted programmes for primary education for specially girl child. ▪ Augmentation of infrastructure and equipments, furniture, blackboard, toilets, boundary construction etc. in village's school.	25,000/-
<u>Water</u> ▪ Provision of potable drinking water supply in nearby villages through hand pumps, tankers etc. ▪ Awareness campaigns for water borne diseases, sanitation and hygiene.	25,000/-
Total	80,000 ~ 0.80 Lakhs

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

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

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 is 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.

- 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.

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 Clay Mining Project of M/s S.P.K. Chimni Bhatta Bricks (Partners : Shri Prasenjit Ghosh & Chiranjit Ghosh), Village : Juridangal, Distt. : Jamtara, Jharkhand (1.62 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 MoFF&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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2. **Hurumbil Stone Mine of Shri Mithlesh Kumar Mehta, Village : Hurumbil, Thana : Patamda, Distt. : East Singhbhum, Jharkhand (2.02 Ha).**

(Proposal no.: SIA/JH/MIN/ 519672 /2025)

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

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

The project has been granted EC by DEIAA, East Singhbhum, Jamshedpur vide memo no. 1553/C, dated 22.04.2017.

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, East Singhbhum which has been taken up for consideration on 09.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 425/M, dated 09.05.2024 by DMO, East Singhbhum, Jamshedpur is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Jamshedpur vide memo no. 1285, dated 12.11.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 14995 cum/annum or 43487 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Hurumbil Stone Mine	
2	Lessee:	:	Shri Mithlesh Kumar Mehta	
3	Lease Address	:	Village : Hurumbil, Thana : Patamda, Distt. : East Singhbhum, Jharkhand.	
4	Lease Area	:	2.02 ha.	5.00 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 50.34 Lakhs	
7	EMP Budget	:	Capital: Rs. 6.86 Lakhs	Recurring: 5.61 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	265974 tons	
10	Mine Life	:	Up to the lease period i.e. 26.09.2017 to 25.09.2027.	
11	Man power	:	46	
12	Water Requirement	:	6.52 KLD (Drinking: 0.69 KLD, Dust Suppression: 0.6 KLD, Plantation: 5.23 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	20 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Kokro River – 89.63km in NW Direction (aerial distance).	
17	Nearest Habitation	:	Hurumbil Village – 0.5 Km	
18	Nearest Railway Station	:	Nimdih Railway Station at 32.94 km (aerial distance)	
19	Nearest Air Port	:	Ranchi Airport 122.69 Km (arial distance) at NW direction.	
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Jamshedpur, vide letter no.: 1409, dated 06/06/2024	
21	Road & Highways	:	The village road connects with Barabazar -Bandun road at a distance of 6.16 in SW direction.	

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary

(GPS Co-ordinates)

Point No.	Latitude	longitude
1	22°59' 13.851" N	86° 27' 49.125" E
2	22° 59' 15.168" N	86° 27' 50.964" E
3	22°59'14.932"N	86° 27' 52.955" E
4	22°9' 14.535" N	86° 27' 53.717" E
5	22°59' 14.622" N	86° 27' 56.189" E
6	22° 59' 15.473" N	86° 27' 56.535" E

	7	22° 59' 15.225" N	86° 28' 0.032" E	
	8	22° 59' 12.250" N	86° 28' 2.790" E	
	9	22° 59' 11.341" N	86° 28' 2.770" E	
	10	22° 59' 11.341" N	86°27' 59.860" E	
	11	22° 59' 12.794" N	86° 28' 0.034" E	
	12	22° 59' 12.803" N	86°27' 58.552" E	
	13	22° 59' 11.270" N	86° 27' 58.286" E	
	14	22° 59' 11.749" N	86° 27' 56.127" E	
	15	22° 59' 13.231" N	86° 27' 56.479" E	
	16	22° 59' 13.501" N	86° 27' 54.632" E	
	17	22° 59' 11.818" N	86° 27' 54.177" E	
	18	22° 59' 12.188" N	86° 27' 50.577" E	
	19	22° 59' 12.806" N	86°27'50.632"E	
	20	22°59'12.995"N	86°27'49.651"E	

LAND DETAILS

J.B. no.	Plot no.
221	814

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DMO, East Singhbhum, Jamshedpur vide letter no. 2480/Khanan, dated 10.09.2016. ii. Lease deed : 26.09.2017 to 25.09.2027.
2	CO	:	The CO, Patamda vide letter no. 526, dated 06.10.2015 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, East Singhbhum, Jamshedpur vide memo no. 122/Khanan, dated 08.02.2025 certified that 01 other mining lease area (6.74 Acre) exists within 500 meters radius from proposed project site and total area is 11.74 Acre.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 2580, dated 24.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Jamshedpur Forest Divisioin vide letter no. 1409, dated 06.06.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.

6	DSR	:	This project is mentioned in approved DSR of East Singhbhum, Jamshedpur District (Sl. no. 46, Page no. 33).
7	Gram Sabha	:	Gram Sabha conducted on 22.05.2015.
8	Scheme / Mine Plan Approval	:	i. Modification on the Mining scheme approved by DMO, East Singhbhum, Jamshedpur vide letter no. 794/Khanan, Dated 05.09.2024. ii. Mine plan approved by DMO, East Singhbhum, Jamshedpur vide letter no. 9708, Dated 19.12.2015.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, East Singhbhum, Jamshedpur vide memo no. 1553/C, dated 22.04.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Jamshedpur vide memo no. 1285, dated 12.11.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. 173, dated 14.02.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/JSR/CTO-14950188 /2023/3, dated 10.01.2023.
13	Production Report	:	Production report issued by DMO, East Singhbhum, Jamshedpur vide memo no. 425/M, dated 09.05.2024.
14	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	:	Mechanized Method	
2	Quarry Area	:	2.02 Ha	Life of Mine – up to the lease period i.e. 26.09.2017 to 25.09.2027
3	Waste Generation	:	63681 cum	
4	Stripping Ratio	:	1:0.04	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	238 m AMSL	
8	Ground Level Elevation	:	234 m AMSL	
9	Ultimate Working	:	214 m AMSL	

	Depth		
10	Water Table	:	Post Monsoon – 207 m AMSL Pre Monsoon – 203 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	30 Kg/day slurry explosives
13	Diesel/Fuel requirement	:	HSD – 231 liters / day (69.3KL/year)

Production Details

Years	Total Excavation of Stone and Soil in Cum	Total Excavation Stone		Total Excavation of Waste Cum	Stipping Ratio T/M^3
		Cum	Mt		
1st 2024-25	16387	14809	42950	1578	1:0.04
2nd 2025-26	15600	14820	42976	780	1:0.02
3rd 2026-27	15785	14995	43487	790	1:0.02
4th 2027-28	15909	17762	42809	1147	1:0.03
Total	**63681**	**59386**	**172222**	**4295**	

Land Use

Sl. No.	Pattern	Existing Land Use (Ha)	At the End of approved modified scheme period (In Ha)	At ultimate stage (in Ha)
1	Quarry	0.94	1.14	1.35 (1.35 ha. Area used for rain water harvesting purposed including 0.06 ha. Area backfilling)
2	Waste Dump	0.00	0.05	Comes under excavation
3	Main road	0.04	0.01	Comes under excavation
4	Infrastructure	0.00	000	Comes under

				excavation
5	Plantation a) Green belt along safety zone	0.00	0.67	0.67
	TOTAL	**0.98**	**1.87**	**2.02**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.666 Ha	1065
2	Dump Yard		0.05	80
3	Along Approach Road		150 m	200
TOTAL				**1345 Trees**

- 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.

Budget for Environmental Management

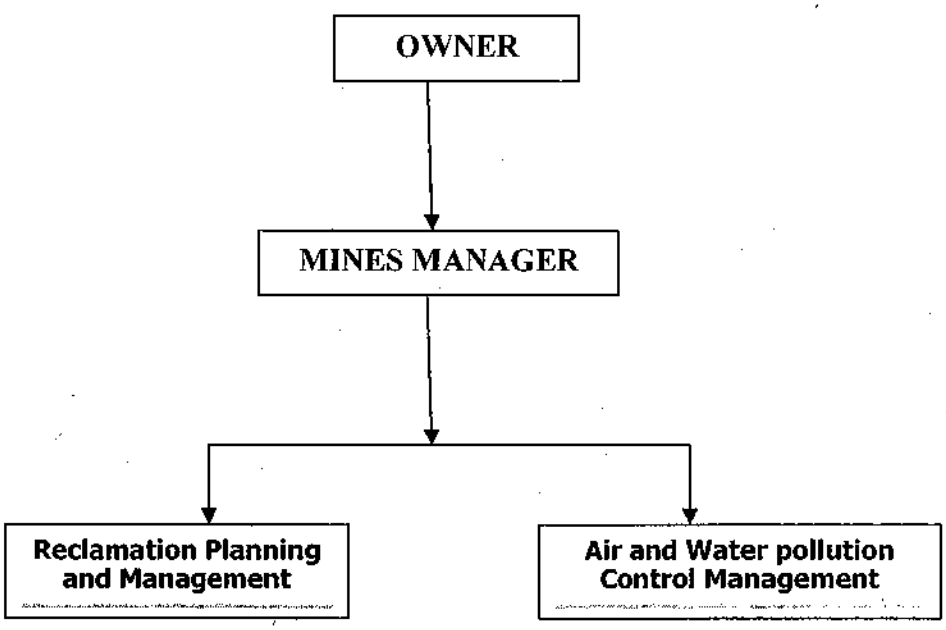
Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 200 X 800 = Rs 1,60,000 (Gabion Plantation along approach road) 1065 X 400 = 4,26,000(Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	5,86,000	58600
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	--	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	• 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**		
Total		**6,86,000**	**5,61,820**

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

Organization Structure



Solid Waste Management

61681 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

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 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 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 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, thereby 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, injuryor 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 Hurumbil Stone Mine of Shri Mithlesh Kumar Mehta, Village : Hurumbil, Thana : Patamda, Distt. : East Singhbhum, Jharkhand (2.02 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 "*EkPed Ma KeNaam*" 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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3. **Dumarbera & Poradiha Stone Mine of Shri Jitendra Kumar Srivastava, Village : Dumarbera & Poradiha, Thana : Kowali, Distt. : East Singhbhum, Jharkhand (2.61 Ha).**

(Proposal no.: SIA/JH/MIN/ 524048 /2025)

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

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

The project has been granted EC by DEIAA, East Singhbhum, Jamshedpur vide letter no. 3266 "A"/C, dated 28.08.2017.

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, East Singhbhum which has been taken up for consideration on 09.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 200/M, dated 01.03.2025 by DMO, East Singhbhum, Jamshedpur is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Jamshedpur vide memo no. 1284, dated 12.11.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 85697 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Dumarbera & Poradiha Stone Mine	
2	Lessee:	:	Shri Jitendra Kumar Srivastava	
3	Lease Address	:	Village : Dumarbera & Poradiha, Thana : Kowali, Distt. : East Singhbhum, Jharkhand	
4	Lease Area	:	2.61 ha.	6.45 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 72.51 Lakhs	
7	EMP Budget	:	Capital: Rs. 7.56 Lakhs	Recurring: 5.736 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of EC)	
9	Mineable Reserves	:	777034tons	
10	Mine Life	:	Up to the lease period i.e. 19.06.2018 to 18.06.2028.	
11	Man power	:	28	

12	Water Requirement	:	5.89 KLD (Drinking: 0.420 KLD, Dust Suppression: 0.8 KLD, Plantation: 4.668 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	20 KVA
15	Crusher	:	Yes –60 TPH
16	Nearest Water Body	:	Naga River – 4.50 km in NW Direction(aerial distance).
17	Nearest Habitation	:	Haldipokar Village: 5km
18	Nearest Railway Station	:	Hauldpokar Railway stationis at 4.37km (aerial distance)in NW Direction
19	Nearest Air Port	:	Sonari, Jamshedpur, Airport at 26 km (aerial distance) at NW direction.
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Jamshedpur, vide letter no.: 1498, dated 18/06/2024 & letter no.: 1497, dated 18/06/2024
21	Road & Highways	:	The mine can be approached by MDR at 1.48 km (Hauldpokar road) in West from applied area.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary

(GPS Co-ordinates)

Point No.	Latitude	longitude
1	22° 33' 56.30" N	86° 10' 05.45" E
2	22° 33' 57.64" N	86° 10' 04.75" E
3	22° 33' 59.54" N	86° 10' 02.93" E
4	22° 33' 59.93" N	86° 10' 03.51" E
5	22° 33' 59.26" N	86° 10' 04.65" E
6	22° 33' 59.23" N	86° 10' 05.16" E
7	22° 33' 58.64" N	86° 10' 05.61" E
8	22° 33' 59.44" N	86° 10' 06.28" E
9	22° 34' 00.40" N	86° 10' 06.55" E
10	22° 34' 02.47" N	86° 10' 06.43" E
11	22° 34' 03.84" N	86° 10' 07.42" E
12	22° 34' 04.86" N	86° 10' 08.51" E
13	22° 34' 06.03" N	86° 10' 08.52" E
14	22° 34' 07.66" N	86° 10' 09.23" E
15	22° 34' 07.41" N	86° 10' 11.29" E
16	22° 34' 06.94" N	86° 10' 11.37" E
17	22° 34' 04.85" N	86° 10' 10.49" E
18	22° 34' 04.32" N	86° 10' 09.52" E
19	22° 34' 03.36" N	86° 10' 09.99" E
20	22° 34' 01.72" N	86° 10' 10.15" E
21	22° 34' 01.23" N	86° 10' 09.81" E
22	22° 33' 59.49" N	86° 10' 09.86" E
23	22° 33' 59.59" N	86° 10' 09.45" E

	24	22° 33' 58.15" N	86° 10' 08.76" E	
	25	22° 33' 58.77" N	86° 10' 07.01" E	
	26	22° 33' 57.33" N	86° 10' 06.89" E	

LAND DETAILS

J.B. no.	Plot no.
22, 63 & 522	139, 214, 215, 216, 781, 782 & 790

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DMO, East Singhbhum, Jamshedpur vide letter no. 2718/Khanan, dated 03.09.2016. ii. Lease deed : 19.06.2018 to 18.06.2028.
2	CO	:	The CO, Potka, East Singhbhum vide letter no. 732, dated 10.08.2015 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, East Singhbhum, Jamshedpur vide memo no. 121/Khanan, dated 08.02.2025 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. 5120 & 5121, dated 26.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Jamshedpur Forest Divisioin vide letter no. 1498 & 1497, dated 18.06.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of East Singhbhum, Jamshedpur District.
7	Gram Sabha	:	Gram Sabha conducted on 09.03.2015.
8	Scheme / Mine Plan Approval	:	Mining plna approved by DMO, East Singhbhum, Jamshedpur vide memo no. 572/Khanan, Dated 29.06.2024.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, East Singhbhum, Jamshedpur vide letter no. 3266 "A"/C, dated 28.08.2017.

10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Jamshedpur vide memo no. 1284, dated 12.11.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-3101977/2018/986, dated 20.09.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/JSR/CTO-14099305 /2022/93, dated 29.09.2022.
13	Production Report	:	Production report issued by DMO, East Singhbhum, Jamshedpur vide memo no. 200/M, dated 01.03.2025.
14	Qualified Person	:	Shri A.K. Sinha vide letter dated 09.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	2.61 Ha	Life of Mine – Up to the lease period i.e. 19.06.2018 to 18.06.2028
3	Waste Generation	:	10775 cum	
4	Stripping Ratio	:	01:10	
5	Working Days	:	300	
6	Benches: size	:	5m x 5 m	
7	Elevation of Mine	:	189 m AMSL	
8	Ground Level Elevation	:	182 m AMSL	
9	Ultimate Working Depth	:	156 m AMSL	
10	Water Table	:	Post Monsoon – 149 m AMSL Pre Monsoon – 145 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	22Kg slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 232 liters / day (70 KL/year)	

Production Details

Years	Production of Stone in Tones/Year	Tonnage Factor (t/m3)	Production of O.B in Cum /Year
6th	**85697**	**2.8**	**3762**
7th	**84238**	**2.8**	**7013**

8th	85520	2.8	0
9th	74320	2.8	0
10th	84966	2.8	0
Total	414741		10775

Land Use

Sl. No.	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha.)	Conceptual Land Use (Ha.)	Area to be converted in the conceptual period.
1	Quarry	0.90	1.52	1.52	Water body
2	Office/Store	0.05	0.05	-	Office
3	Road	0.04	0.04	0.04	Road
4	Dump Yard	0.00	0.00	0.00	Plantation
5	Crusher	0.11	0.11	0.11	Crusher
6	Garland Drain	0.76	0.76	0.76	Plantation
	Safety zone				
	Settling Tank				
7	Unutilized	0.75	0.13	0.13	Plantation
	TOTAL	**2.61**	**2.61**	**2.61**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.76 Ha	1216
2	Unutilized		0.13 Ha	280
3	Along Approach Road		100 m	132
TOTAL				**1556 Trees**

- 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.

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	Plantation 132 X 800 = Rs 1,05,600 (Gabion Plantation along approach road) 1496 X 400 = 5,98,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,04,000	70,400
3	Fencing	52,000	
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		**7,56,000**	**5.736**

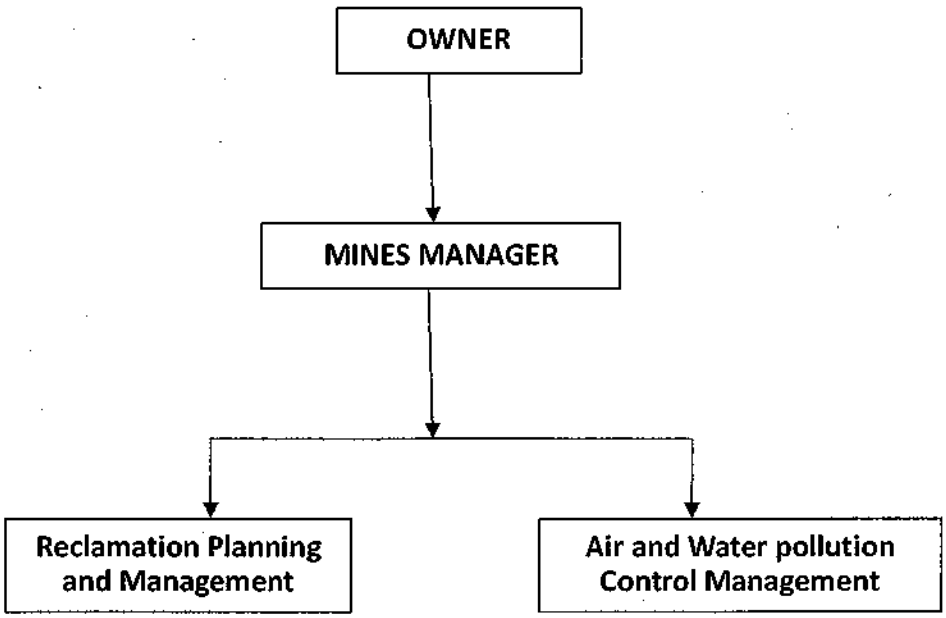
Environment Monitoring Programme:

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

10775 cum. 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 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 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 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 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, thereby 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, injuryor 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 Dumarbera & Poradiha Stone Mine of Shri Jitendra Kumar Srivastava, Village : Dumarbera & Poradiha, Thana : Kowali, Distt. : East Singhbhum, Jharkhand (2.61 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. The 1st mine plan was valid for period from 2018-19 to 2022-23. Subsequent scheme of mining has been prepared on 29.06.2024. Hence, the mine has been operating without any approved mine scheme / plan for the period from 01.04.2023 to 28.06.2024. Hence JSPCB may take suitable action under appropriate prevailing Acts and Rules.
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 *"EkPed Ma KeNaam"* 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.

****

4. **Chuwa Stone Mine of M/s Ayachi Enterprises (Prop. : Shri Ravi Kumar), Village : Chuwa, P.S. : Jirwabadi, Distt. : Sahibganj, Jharkhand (3.44 Ha).**

(Proposal no.: SIA/JH/MIN/ 516972 /2025)

Name of the consultant : Sathi Planners 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/2016-17/117, dated 21.03.2018.

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 09.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 1248/M, dated 16.11.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 1938, dated 19.10.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 1,09,935.90 Cum. / 2,96,826.93 Tons
Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chuwa Stone Mine Project Type – Stone Mine	
2	Lessee:	:	Sri Ravi Kumar	
3	Lessee Address	:	Sri Ravi Kumar S/O-Late PrabhuNath Mishra West of Police Line, P.S.- Jirwabadi, Dist.- Sahibganj, Jharkhnad	
4	Lease Area	:	3.44 Ha. (At Mouza- Chuwa, Thana- Jirwabadi, District- Sahibganj, Jharkhand)	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs.63.09Lakhs	Recurring Cost: Rs. 13.93 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 12.244 Lakhs	Recurring Cost: Rs. 6.156 Lakhs
8	New or Expansion	:	New (Re-appaisal of DEIAA EC)	
9	Mineable Reserves	:	17,43,971.72 Tons	
10	Mine Life	:	Up to the lease period i.e. 04.06.2019 to 03.06.2029.	
11	Man power	:	28 Person	

12	Water Requirement	:	8.85 KLD (Drinking: 0.42 KLD, Dust Suppression: 2.34 KLD, Plantation: 6.09 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	20 KVA D.G. Set proposed
15	Crusher	:	No
16	Nearest Water Body	:	Ganga River – 10 Km in NE direction. (Arial distance).
17	Nearest Habitation	:	Sahibganj – 7.21 Km in NE direction
18	Nearest Rail Station	:	Sahibganj Railway Station is 8 km (aerial distance) in North-East direction.
19	Nearest Air Port	:	Deoghar, Airport at 122 km South-West Direction.
20	Nearest Forest	:	DFO (Sahibganj) letter no.- 1835 Dated: 23/09/2017 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	The SH-33 (Bhagalpur-Sahibganj) road is crossing on the northen side at a distance of about 4.21 km and from lease area.

CO-ORDINATES

Point ID	(GPS Co-ordinates)
1	Lat.- 25°12'40.39'' to 25°12'48.10'' N
2	Long.- 87°34'37.62'' to 87°34'49.45'' E

LAND DETAILS

Khata no.	Plot no.
01	44
31	45
19	42

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DMO, Sahibganj vide letter no. 1813/M, dated 27.11.2017.

			ii. Lease deed : 04.06.2019 to 03.06.2029.
2	CO	:	The CO, Mandro vide memo no. 434/Ra., dated 22.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 1245/M, dated 16.11.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1405, dated 28.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 1835, dated 23.09.2017 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. 24, Page no. 131).
7	Gram Sabha	:	Gram Sabha conducted on 16.08.2017.
8	Scheme / Mine Plan Approval	:	Mine plan approved by DMO, Sahibganj vide letter no. 483, dated 20.06.2024.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/117, dated 21.03.2018.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 1938, dated 19.10.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-8185171 /2022 /172, dated 09.04.2022.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-20822608 /2025/20, dated 03.01.2025.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1248/M, dated 16.11.2024.
14	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	:	3.44 Ha. (During plan period)	Life of Mine – Up to the lease period i.e. 04.06.2019 to 03.06.2029.
3	Waste Generation	:	60280.60 Cum. O.B (During Scheme plan period)	
4	Stripping Ratio	:	09:50	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Highest Elevation of Mine	:	240 m AMSL	
8	Ground Level Elevation	:	181 m AMSL	
9	Ultimate Working Depth	:	55 m AMSL	
10	Water Table	:	(During pre-monsoon 159 m AMSL) (During post-monsoon 165 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	115 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 260 liters / day (78 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	108343.70	2.7	292527.99	361.14	975.09	5702.30	19.00
2nd	109308.90	2.7	295134.03	364.36	983.78	5753.10	19.17
3rd	109791.50	2.7	296437.05	365.97	988.12	5778.50	19.26
4th	109451.40	2.7	295518.78	364.83	985.06	25326.60	84.42
5th	109935.90	2.7	296826.93	366.45	989.42	17720.10	59.06
Total	**549831.40**	**2.7**	**1476444.78**	**366.45 (Max.)**	**989.42 (Max.)**	**60282.60**	**84.42 (Max)**

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End Of Life of Mine (Ha)
1	Excavation	1.185	2.658	2.658 (0.100ha area shall be backfilled 1.615 ha area shall be water reservoir and 0.943 ha as dead benches)
2	Waste Dump	0.000	Nil (Waste dump be removed and backfilled)	Nil (Waste dump be removed and backfilled)
3	Road	0.090	0.000	0.000
4	Infrastructure (Crusher)	0.000	Nil	Nil
5	Safety zone barrier	0.782	0.782	0.782
6	Total	2.057	3.440	3.440
7	Unused Area	1.383	0.000	0.000
	TOTAL	**3.440**	**3.440**	**3.440**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.782 Ha	1251
2	Along Approach Road		0.586 km	780
TOTAL				**22,031**

- 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

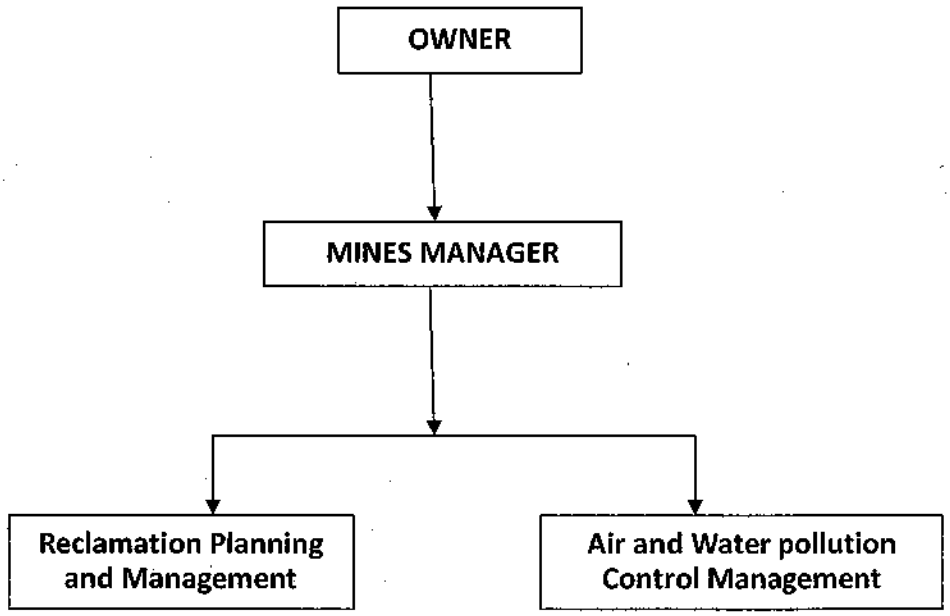
Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 800 X 780 = Rs 6,24,000 (Gabion	11,24,400	1,12,440

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	Plantation along approach road) 400 X 1251 = Rs.5,00,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)		
3	Fencing	100,000	-
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**		2,03,220
Total		**12,24,400**	**6,15,660**

Solid Waste Management

60280.60 Cum. 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 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 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 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 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, thereby 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, injuryor 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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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 Chuwa Stone Mine of M/s Ayachi Enterprises (Prop. : Shri Ravi Kumar), Village : Chuwa, P.S. : Jirwabadi, Distt. : Sahibganj, Jharkhand (3.44 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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5. **Borna Stone Mine of Md. Mojibur Rahman, Village : Borna, Thana : Ranga, Distt. : Sahibganj, Jharkhand (0.81 Ha).**

(Proposal no.: SIA/JH/MIN/ 526750 /2025)

Name of the consultant : Sathi Planners 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/2016-17/89, dated 13.12.2016.

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, Sahibganj which has been taken up for consideration on 09.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 1340/M, dated 10.12.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2279, dated 17.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 2,10,000 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Borna Stone Mines	
2	Lessee:	:	Md. Mojibur Rahman	
3	Lease Address	:	At .: Chandpur, P.O .: Aagloi, P.S .: Barhampur, Dist- Sahibganj, JharkhandDistick – Motihari , Sate -Bihar	
4	Lease Area	:	0.81 Ha.	2.00 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 93.68 Lakhs	
7	EMP Budget	:	Capital: Rs.72.38 Lakhs	Recurring: 06.00 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	Tonnes: 133750	
10	Mine Life	:	Up to the lease period i.e. 19.01.2016 to 18.01.2026.	
11	Man power	:	56	
12	Water Requirement	:	6.69 KLD (Domestic : 0.25 KLD, Dust Suppression : 2.60 KLD & Plantation : 3.84 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	20 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	River Ganges – 15 Km	
17	Nearest Habitation	:	Gilamari Village – 0.5 Km	
18	Nearest Railway Station	:	Barharwa Railway station is at 24 km (aerial distance).	
19	Nearest Air Port	:	Deoghar Airport at 110 km.	
20	Nearest Forest	:	Divisional Forest Officer, Sahibganj, vide letter no.: 2327, dated 29/12/2015 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.	
21	Road & Highways	:	NH-80 is near about 11 km away from applied area	

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates)		
Sl.No.	Latitude	Longitude
1	23 0 52'41 .40" N	840 50'47.34" E
2	23 0 22'46 .49" N	84° 50' 52.03" E

LAND DETAILS

Khata no.	Plot no.
64	405 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 19.01.2016 to 18.01.2026.
2	CO	:	The CO, Patna, Sahibganj vide memo no. 649/Ra., dated 18.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Sahibganj vide memo no. 1338/M, dated 10.12.2024 certified that 01 other mining lease area (8.62 Acre) exists within 500 meters radius from proposed project site and total area is 10.62 Acre.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 472, dated 27.02.2025 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 2327, dated 29.12.2015 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. 134, Page no. 144).
7	Gram Sabha	:	Gram Sabha conducted on 15.01.2016.
8	Scheme / Mine Plan Approval	:	i. Mine plan approved by DMO, Sahibganj vide letter no. 303/M, dated 12.01.2016. ii. Mining scheme approved by DMO, Sahibganj vide letter no. 206, dated 24.02.2021.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/89, dated 13.12.2016.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2279, dated 17.12.2024.
11	Consent to Establiish (CTE)	:	CTE issued by JSPCB vide Ref. no. PC/NOC/Deo/272/10/B-2612, dated 20.09.2011.

12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-18973886 /2024/134, dated 04.05.2024.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1340/M, dated 10.12.2024.
14	Grid certificate	:	DMO, Sahibganj vide memo no. 315, dated 18.02.2025 certified that the proposed site is outside of Redzone Grid 1, 3, 4 & 7.
14	Qualified Person	:	Shri J.P. Bhattacharya vide letter dated 09.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	2.00 Ha	Life of Mine – Up to the lease period i.e. 19.01.2016 to 18.01.2026.
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	87 m AMSL to 57 m AMSL	
8	Ground Level Elevation	:	57 m AMSL	
9	Ultimate Working Depth	:	72 m AMSL	
10	Water Table	:	Post Monsoon – 42 m AMSL Pre Monsoon – 37 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	92 kg/day slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 259.44 liters / day (77.83 KL/year)	

Production Details

Years	Production of stone in Tonnes/Year	Production of O.B in Cum/Year	Production of intercalated waste in Cum/Year	Total Waste in Cum/year
1st	18027	0.00	0.00	0.00
2nd	18012	0.00	0.00	0.00
3rd	18058	0.00	0.00	0.00
4th	18058	0.00	0.00	0.00
5th	18058	0.00	0.00	0.00
Total	**90213**	**0.00**	**0.00**	**0.00**

Land Use

Sl. No.	Pattern	Existing Land Use (Ha.)	Proposed land Use (Ha.)	Conceptual Land Use (Ha.)
1.	**Mining**	**0.294**	**0.294**	**0.479**
2.	**Dumping**	**0.040**	**0.040**	**0.040**
3.	**Safety Zone**	**0.300**	**0.300**	**0.300**
4.	**Road**	**0.010**	**0.010**	**-**
5.	**Balanced Land**	**0.166**	**0.166**	**-**
	Total	**0.810**	**0.810**	**0.810**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.30 Ha	480
2	Along Approach Road		600 m	800
TOTAL				**1280 Trees**

- 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.

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	Plantation 384 X 800 = Rs 3,07,200 (Gabion Plantation along approach road) 926 X 400 = 3,70,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	8,32,000	83,200
3	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		**9,32,000**	**5,86,420**

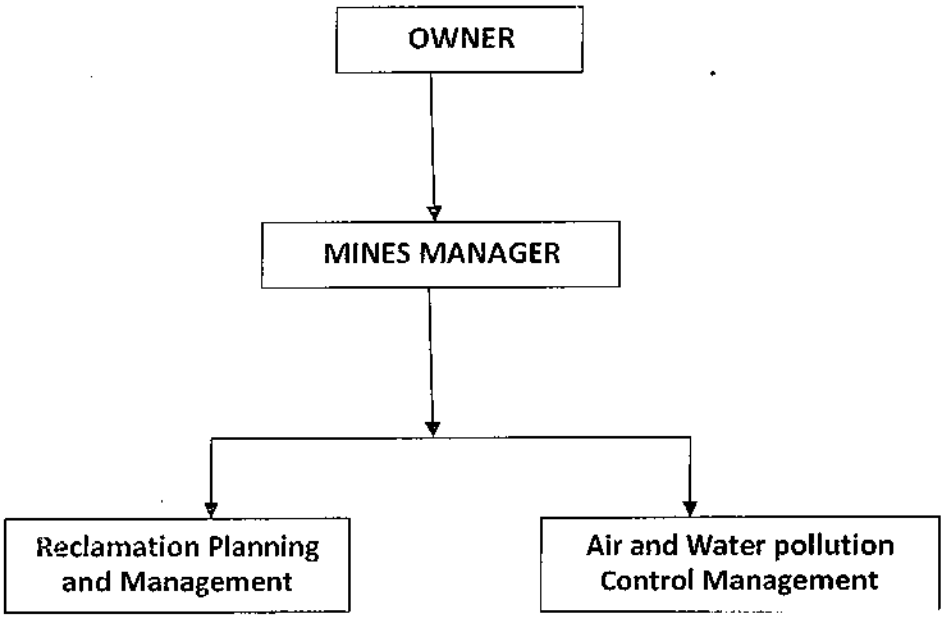
Environment Monitoring Programme:

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

0 cum. 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 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 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 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 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, thereby 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, injuryor 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 Borna Stone Mine of Md. Mojibur Rahman, Village : Borna, Thana : Ranga, Distt. : Sahibganj, Jharkhand (0.81 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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6. **Borna Stone Mine of M/s Dev Stone Works (Shri Rajesh Kumar Roshan), Village : Borna, Thana : Ranga, Distt. : Sahibganj, Jharkhand (3.385 Ha).**

(Proposal no.: SIA/JH/MIN/ 523361 /2025) (New EC) (Re-appraisal of DEIAA EC)

Name of the consultant : Sathi Planners 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/2017-18/240, dated 13.09.2017.

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 09.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 1213/M, dated 16.11.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 1936, dated 19.10.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 77777.77 cum/annum or 210000 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Borna Stone Mine	
2	Lessee:	:	M/S Dev Stone Works Prop.: Shri Rajesh Kumar Singh	
3	Lease Address	:	Village : Borna, Thana : Ranga, Distt. : Sahibganj, Jharkhand	
4	Lease Area	:	8.36 ha.	3.385 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 96.03 Lakhs	
7	EMP Budget	:	Capital: Rs. 13.88 Lakhs	Recurring: 6.42 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	2105182 tons	
10	Mine Life	:	Up to the lease period i.e. 01.08.2016 to 31.07.2026.	
11	Man power	:	17	
12	Water Requirement	:	7.37 KLD (Drinking: 0.255 KLD, Dust Suppression: 2.4 KLD, Plantation: 4.716 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	20 KVA	
15	Crusher	:	60TPH	
16	Nearest Water Body	:	Ganga River – 20 km	
17	Nearest Habitation	:	Borna Village –0.7 Km	

18	Nearest Railway Station	:	BarharwaRailway Station at 6.10 km (aerial distance)
19	Nearest Air Port	:	Deoghar Airport 111.70 Km (arial distance).
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 1747, dated 09/09/2015
21	Road & Highways	:	133A (Hiranpur-Rajmal Rd) at 2.42 km (aerial distance) in East direction

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary

(GPS Co-ordinates)

Point No.	Latitude	longitude
1	24° 50' 00.84N	87°43' 08.93" E
2	24° 49' 59.53N	87°43' 09.41" E
3	24° 49' 00.40N	87°43' 10.73" E.
4	24° 49' 59.1 IN	87°43' 10.72" E
5	24° 49' 56.89N	87°43' 10.62" E
6	24° 49' 57.74N	87°43' 13.63" E
7	24° 49' 57.12N	87°43' 15.33" E
8	24° 50' 00.32N	87°43' 14.03" E
9	24° 50' 02.00N	87°43' 13.78" E
10	24° 50' 04.39N	87°43' 15.14" E
11	24° 50' 04.90N	87°43' 18.71" E
12	24° 50' 04.02N	87°43' 12.96" E
13	24°50' 03.45" E	87°43' 11.79" E
14	24° 50' 02.96N	87°43' 10.89" E
15	24° 50' 02.54N	81°43' 09.76" E
16	24° 50' 02.39N	87°43' 08.93" E

LAND DETAILS

Khata no.	Plot no.
24, 44, 52, 58 & 65	273, 432, 433, 299, 420, 421, 417, 418, 419 & 422

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 01.08.2016 to 31.07.2026.
2	CO	:	The CO, Patna, Sahibganj vide memo no. 01/Ra., dated 06.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan.

3	DMO	:	DMO, Sahibganj vide memo no. 538/M, dated 01.07.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1311, dated 28.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 1747, dated 09.09.2015 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. 39, Page no. 133).
7	Gram Sabha	:	Gram Sabha conducted on 14.12.2021.
8	Scheme / Mine Plan Approval	:	i. Mine plan approved by DMO, Sahibganj vide letter no. 3178/M dated 16.12.2016. ii. Mining scheme approved by DMO, Sahibganj vide letter no. 1025, dated 08.10.2021.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/240, dated 13.09.2017.
10	Compliance report of EC and Grid certificate	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 1936, dated 19.10.2024 and also certified that the proposed project is outside the negative supporting carrying capacity Grid 01, 03, 04 & 07.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2134780 /2018/363, dated 05.04.2018.
12	Consent to Operate (CTO)	:	i. CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-2928048 /2019/1559, dated 31.07.2019. ii. CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-10862191 /2021/1078, dated 19.09.2021.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1243/M, dated 16.11.2024.
14	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 11.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	3.385 Ha	Life of Mine – Up to the lease period i.e. 01.08.2016 to 31.07.2026.
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	139 m AMSL	
8	Ground Level Elevation	:	113 m AMSL	
9	Ultimate Working Depth	:	95 m AMSL	
10	Water Table	:	Post Monsoon – 85 m AMSL Pre Monsoon – 79 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	30 Kg/day slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 288 liters / day (86.4 KL/year)	

Production Details

Years	Production of stone in Tonnes/Year	Production of O.B in Cum/Year	Tonnage Factor (t/m^3)	Total Waste in Cum/year
2021-2022	77777.77	210000	2.7	0.00
2022-2023	77777.77	210000	2.7	0.00
2023-2024	77777.77	210000	2.7	0.00
2024-2025	77777.77	210000	2.7	0.00
2025-2026	77777.77	210000	2.7	0.00
Total	**388888.85**	**1050000**		**0.00**

Land Use

Sl. No.	Pattern	Existing Land Use (Ha)	Proposed land use (Ha.)	Conceptual land use (In Ha)	Area to be converted in the conceptual period (in Ha)
1	Quarry	1.226	2.020	2.020	Water body
2	Safety zone	0.056	0.010	0.010	Comes under excavation
3	Approach road	0.910	0.086	0.086	Green belt
4	Dump with para wall, drains	0.370	0.370	0.370	Water body
5	Crusher	0.050	0.005	0.005	-
6	Rest shelter, Office etc	0.010	0.000	0.000	-
7	Green belt	0.000	0.910	0.910	Green belt
8	Area which will remain untouched	0.808	0.0020	0.0020	
	TOTAL	**3.385**	**3.385**	**3.385**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.91 Ha	1472
2	Along Approach Road		500 m	1000
TOTAL				**1572 Trees**

- 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.

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	Plantation 1000 X 800 = Rs 800,000 (Gabion Plantation along approach road) 1488 X 400 = 5,95,200(Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	13,95,200	13,9520
3	Fencing	100000	--
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		**14,95,200**	**6,42,740**

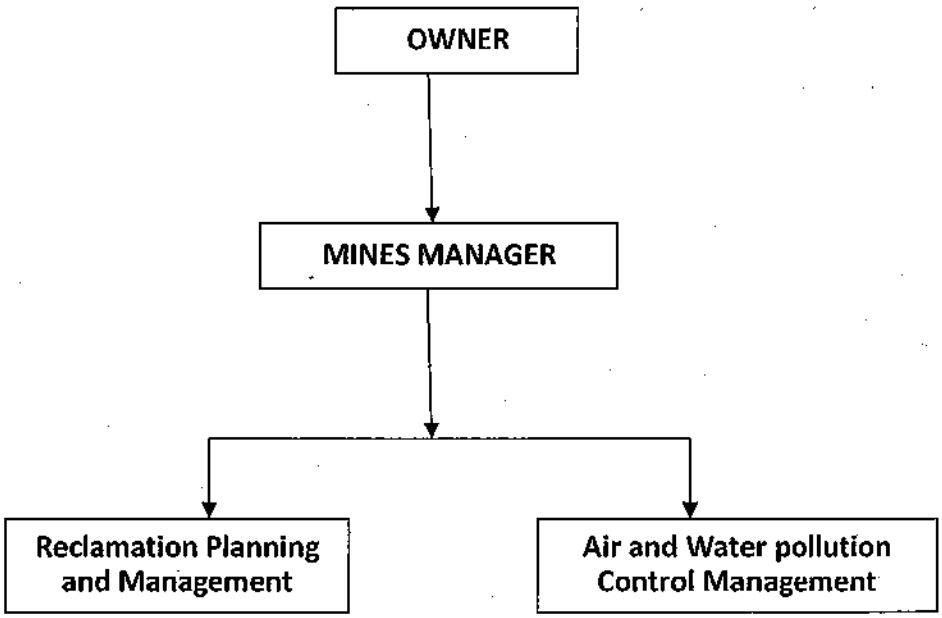
Environment Monitoring Programme:

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

61681 cum. 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 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 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 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 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, thereby 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, injuryor 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 Borna Stone Mine of M/s Dev Stone Works (Shri Rajesh Kumar Roshan), Village : Borna, Thana : Ranga, Distt. : Sahibganj, Jharkhand (3.385 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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7. **Jokmari Stone Mine of Shri Chaturanand Pandey, Village : Jokmari, Thana : Jirwawadi, Distt. : Sahibganj, Jharkhand (1.9 Ha).**

(Proposal no.: SIA/JH/MIN/ 523509 /2025)

Name of the consultant : Sathi Planners 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/2016-17/43, dated 27.03.2017.

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 09.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 42/M, dated 13.01.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide letter no. 91, dated 22.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 45000 cum/annum or 135000 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Jokmari Stone Mine	
2	Lessee:	:	Prop.- Shri Chaturaand Pandey	
3	Lease Address	:	Village : Jokmari, Thana : Jirwawadi, Distt. : Sahibganj, Jharkhand	
4	Lease Area	:	1.9 ha.	4.78 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 41.95 Lakhs	
7	EMP Budget	:	Capital: Rs. 5.12 Lakhs	Recurring: 5.47 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	658840 tons	
10	Mine Life	:	Up to the lease period i.e. 06.11.2017 to 05.11.2027.	
11	Man power	:	22	
12	Water Requirement	:	4.2 KLD (Drinking: 0.330 KLD, Dust Suppression: 0.8 KLD, Plantation: 3.042 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	20 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Ganga River – 12 km in North-East direction from the mine site	
17	Nearest Habitation	:	Jokmari Village –700 m	

18	Nearest Railway Station	:	Sahibganj Railway station is about 4.3 km away from existing area.
19	Nearest Air Port	:	Deoghar Airport at 125 km SE direction.
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 676, dated 14/05/2016
21	Road & Highways	:	A well motorable road is connected to the mine site at a distance of 100 m West direction The mine can be approached by NH-33 at 1.23 km (aerial distance) in North And SH-18 At 6.88 in East direction from applied area

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary

(GPS Co-ordinates)

Sl no.	Latitude	Longitude
1	25°14'16.98"N	87°35'27.63"E
2	25°14'23.87"N	87°35'35.38"E

LAND DETAILS

Khata no.	Plot no.
14	101 (P) & 147 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 06.11.2017 ot 05.11.2027.
2	CO	:	The CO, Patna, Sahibganj vide memo no. 206/Ra., dated 30.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid certificate	:	DMO, Sahibganj vide memo no. 325/M, dated 18.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site falls under Grid 4 and production is within the over all permissible production limit.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2452, dated 13.12.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.

5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 676, dated 14.05.2016 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. 05, Page no. 212).
7	Gram Sabha	:	Gram Sabha conducted on 15.01.2017.
8	Scheme / Mine Plan Approval	:	i. Mine plan approved by DMO, Sahibganj vide memo no. 3219, dated 20.12.2016. ii. Mining scheme approved by DMO, Sahibganj vide memo no. 1237, dated 24.12.2021.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/43, dated 27.03.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 91, dated 22.01.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2051673 /2018/868, dated 20.08.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-20762928 /2025/95, dated 10.01.2025.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 42/M, dated 13.01.2024.
14	Qualified Person	:	Shri Surendra Sai was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	1.9 Ha	Life of Mine – Up to the lease period i.e. 06.11.2017 to 05.11.2027.
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	135 m AMSL	
8	Ground Level Elevation	:	87 m AMSL	

9	Ultimate Working Depth	:	107 m AMSL
10	Water Table	:	Post Monsoon – 107 m AMSL Pre Monsoon – 103 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	5500 gm/day slurry explosives
13	Diesel/Fuel requirement	:	HSD –232 liters / day (70 KL/year)

Production Details

Years	Production of stone in Cum /Year	Production of Stone in Tones/Year	Tonnage Factor(t/m3)	Production of O.B in Cum /Year
1st	27720	74844	2.7	0
2nd	36216	97783	2.7	0
3rd	29128	78646	2.7	0
4th	27552	74390	2.7	0
5th	26426	71350	2.7	0
Total	**147042**	**397013**		**0**

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	Excavation	0.70	1.39	1.39	Water body (Rain Water Harvesting)
2	Plantation	0.00	0.51	0.51	Greenbelt
3	Road	0.01	0.00	0.00	Comes under mining area
4.	Unused Area	1.19	Nil	Nil	
	TOTAL	**1.9**	**1.9**	**1.9**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.51 Ha	816

2	Along Approach Road		0.100 km	132
TOTAL				**1014 Trees**

- 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.

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	Plantation 132 X 800 = Rs 105600 (Gabion Plantation along approach road) 816 X 400 = 326,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	4,32,000	43200
3	Fencing	80,000	
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		5,12000	5,46420

Environment Monitoring Programme:

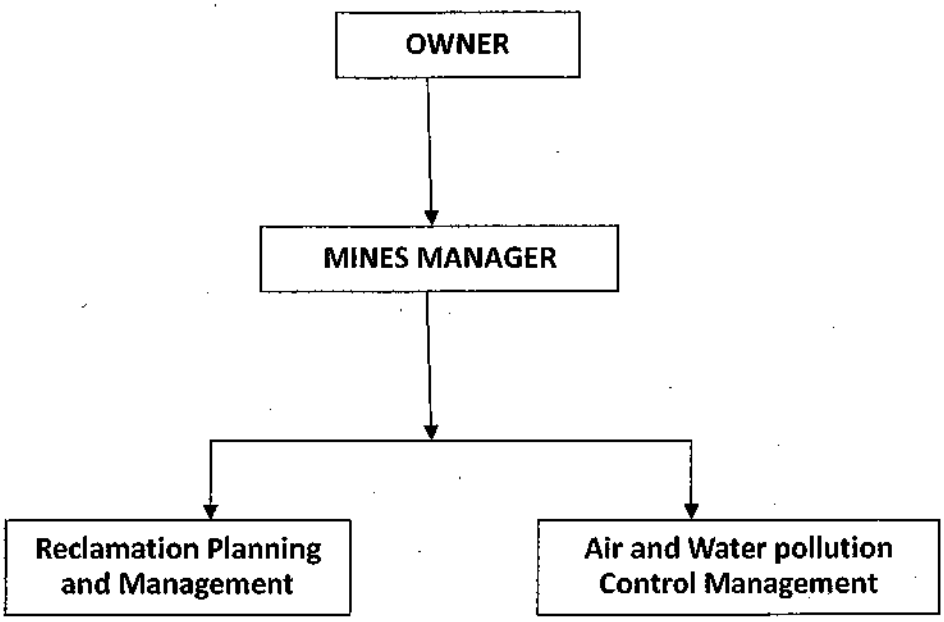
SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly

3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Solid Waste Management

0 cum. 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 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 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 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 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, thereby 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, injuryor 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 Jokmari Stone Mine of Shri Chaturanand Pandey, Village : Jokmari, Thana : Jirwawadi, Distt. : Sahibganj, Jharkhand (1.9 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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. **Gilamari Stone Mine of M/s Ayachi Enterprises (Prop. : Shri Ravi Kumar), Village : Gilamari, Thana : Mirza Chauki, Distt. : Sahibganj, Jharkhand (2.63 Ha).**

(Proposal no.: SIA/JH/MIN/ 523500 /2025)

Name of the consultant : Sathi Planners 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/2016-17/116, dated 26.12.2016.

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, Sahibganj which has been taken up for consideration on 09.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 1270/M, dated 28.11.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by ISPCB, Regional Office, Dumka vide memo no. 1937, dated 19.10.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 198761 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Gilamari Stone Mine	
2	Lessee:	:	M/s Ayachi Enterprises Sri Ravi Kumar	
3	Lease Address	:	Village : Gilamari, Thana : Mirza Chauki, Distt. : Sahibganj, Jharkhand	
4	Lease Area	:	2.63 Ha.	6.50 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 93.68 Lakhs	
7	EMP Budget	:	Capital: Rs. 6.77 Lakhs	Recurring: 5.70 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	2178487tons	
10	Mine Life	:	Upto the lease period i.e. 28.01.2017 to 27.01.2027.	
11	Man power	:	27	

12	Water Requirement	:	5.528 KLD (Drinking: 0.450 KLD, Dust Suppression: 1.148 KLD, Plantation: 3.930 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	20 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Ganga River – 12 Km in NE direction (aerial distance).
17	Nearest Habitation	:	Gilamari Village – 0.5 Km
18	Nearest Railway Station	:	Mirza chouki Railway Station at 5 km (aerial distance).
19	Nearest Air Port	:	Deoghar Airport 121 Km (arial distance) at S-W direction.
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 1383 Dated: 07/10/2016
21	Road & Highways	:	Nearest Highway is SH-33 is 5 km.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates)		
Sl.No.	Latitude	Longitude
1	25°13'28.15" N	87°31'26.51" E
2	25°13'28.24" N	87°31'28.29" E
3	25°13'27.68" N	87°31'28.47" E
4	25°13'26.92" N	87°31'29.67" E
5	25°13'24.81" N	87°31'30.42" E
6	25°13'23.90" N	87°31'30.30" E
7	25°13'21.66" N	87°31'30.22" E
8	25°13'22.38" N	87°31'27.50" E
9	25°13'22.18" N	87°31'24.56" E
10	25°13'21.18" N	87°31'23.65" E
11	25°13'21.19" N	87°31'22.28" E
12	25°13'23.96" N	87°31'25.32" E

LAND DETAILS

Khata no.	Plot no.
18	208 (P) & 216
21	215 (P) & 217
24	214 (P)
49	210 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 28.01.2017 to 27.01.2027.
2	CO	:	The CO, Mandro vide memo no. 435/Ra., dated 22.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid certificate	:	DMO, Sahibganj vide memo no. 1246/M, dated 16.11.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1411, dated 28.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 1383, dated 07.10.2016 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. 26, Page no. 274).
7	Gram Sabha	:	Gram Sabha conducted on 22.09.2016.
8	Scheme / Mine Plan Approval	:	i. Mine plan approved by DMO, Sahibganj vide letter no. 886, dated 17.11.2016. ii. Mining scheme approved by DMO, Sahibganj vide letter no. 1129/M, dated 20.11.2021.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/116, dated 26.12.2016.
10	Compliance	:	The compliance report of previous EC has been issued by JSPCB,

	report of EC		Regional Office, Dumka vide memo no. 1937, dated 19.10.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1363359 /2017/284, dated 09.06.2017.
12	Consent to Operate (CTO)	:	i. CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-1574069 /2017/146, dated 29.06.2017. ii. CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-11886744 /2022/47, dated 12.03.2022.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1270/M, dated 28.11.2024.
14	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	:	Mechanized Method	
2	Quarry Area	:	2.93 Ha	Life of Mine – Upto the lease period i.e. 28.01.2017 to 27.01.2027.
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	225 m AMSL	
8	Ground Level Elevation	:	195 m AMSL	
9	Ultimate Working Depth	:	192 m AMSL	
10	Water Table	:	Post Monsoon – 175 m AMSL Pre Monsoon – 169 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	92 kg/day slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 231 liters / day (69.3 KL/year)	

Production Details

Years	Production of stone in Tones/Year	Production of O.B in Cum/Year	Total waste in cum	Stripping ratio t/m^3

1st	196028	-	-	1.0.00
2nd	198761	-	-	1.0.00
3rd	196298			1.0.00
4th	193763			1.0.00
5th	193930			1.0.00
Total	**978780**	-	-	-

Land Use

Sl. No.	Pattern	Existing land Use (Acre)	At the end of Plan Period (Acre)	At Conceptual Period (Acre)
1	Quarry	2.59	4.35	4.35
2	Road	0.22	0.22	0.22
3	Waste Dumping / Rest Shed	0.30	0.30	NIL
4	Plantation (Green Belt)	1.43	1.43 (within 7.5m safety Barrier beside road)	1.43 (Within 7.5m Safety barrier beside road)
5	Total Area Used	4.54	6.30	6.00
6	Total Unused Area	1.96	0.20	0.50
7	**TOTAL**	**6.50**	**6.50**	**6.50**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.579 Ha	926
2	Along Approach Road		0.287 km	384
TOTAL				**1310 Trees**

- 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.

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	Plantation 384 X 800 = Rs 3,07,200 (Gabion Plantation along approach road) 926 X 400 = 3,70,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,77,600	67760
3	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		**6,77,600**	**5,70,980**

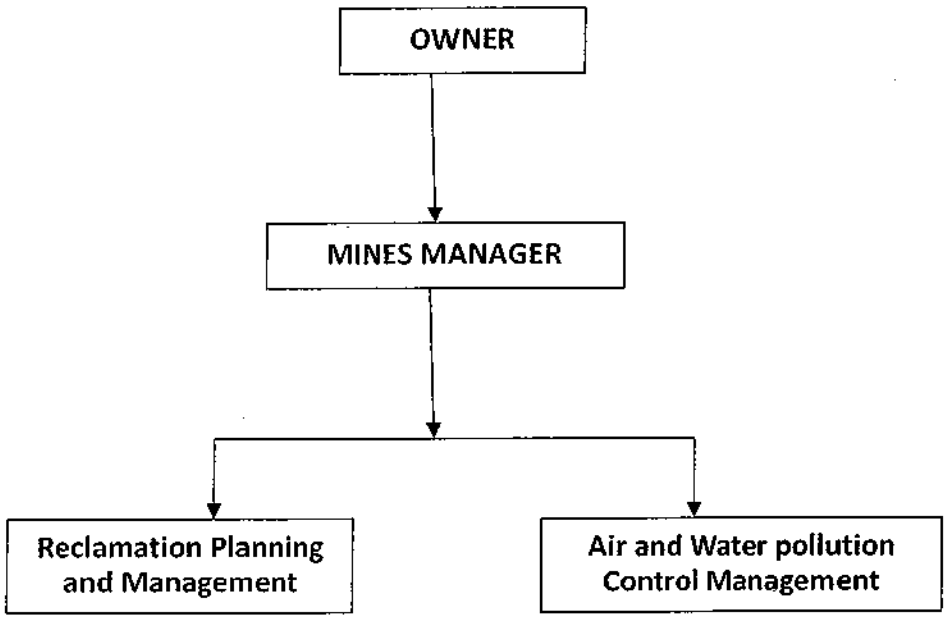
Environment Monitoring Programme:

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

0 cum. 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 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 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 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 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, thereby 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, injuryor 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 Gilamari Stone Mine of M/s Ayachi Enterprises (Prop. : Shri Ravi Kumar), Village : Gilamari, Thana : Mirza Chauki, Distt. : Sahibganj, Jharkhand (2.63 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 "*EkPed Ma KeNaam*" 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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9. **Chuwe Stone Mine of M/s Bajrang Stone (Prop. : Shri Alok Ranjan), Village : Chuwe, P.S. : Mirjachowki, Distt. : Sahibganj, Jharkhand (2.12 Ha).**

(Proposal no.: SIA/JH/MIN/ 523773 /2025)

Name of the consultant : Sathi Planners 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/2016-17/44, dated 27.03.2017.

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 09.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 1249/M, dated 16.11.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 1996, dated 26.09.2023.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 50681.83 cum/annum or 136840.94 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chuwe Stone Mine	
2	Lessee:	:	M/S Bajrang Stone Proprietor- Sri Alok Ranjan	
3	Lease Address	:	Village : Chuwe, P.S. : Mirjachowki, Distt. : Sahibganj, Jharkhand	
4	Lease Area	:	2.12 ha.	5.25 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 55.04 Lakhs	
7	EMP Budget	:	Capital: Rs. 6.72 Lakhs	Recurring: 5.704 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	956276.36tons	
10	Mine Life	:	Upto the lease period i.e. 18.01.2018 to 17.01.2028.	
11	Man power	:	18	
12	Water Requirement	:	6.81 KLD (Drinking: 0.27 KLD, Dust Suppression: 2.92 KLD, Plantation: 3.62 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	20 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Ganga River – 2.64 km in NW Direction(aerial distance).	
17	Nearest Habitation	:	Chuwe Village – 0.56 Km	
18	Nearest Railway	:	Karamtola Railway Station at 1.14 km (aerial distance)	

	Station		
19	Nearest Air Port	:	Deoghar Airport 122.89 Km (aerial distance) at SW direction.
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 1761, dated 02/12/2016
21	Road & Highways	:	Approach road 354m connecting village road. Nearest highway SH-18 is about 1.29 km away in NE direction from applied area.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary

(GPS Co-ordinates)

Point ID	Latitude	Longitude
P1	25º14' 50.521" N	87º32' 34.474" E
P2	25º14' 49.813" N	87º32' 35.777" E
P3	25º14' 48.857" N	87º32' 37.186" E
P4	25º14' 48.660" N	87º32' 38.940" E
P5	25º14' 48.914" N	87º32' 40.323" E
P6	25º14' 49.624" N	87º32' 40.267" E
P7	25º14' 50.353" N	87º32' 40.971" E
P8	25º14' 51.213" N	87º32' 40.624" E
P9	25º14' 51.428" N	87º32' 41.812" E
P10	25º14' 53.556" N	87º32' 41.512" E
P11	25º14' 53.800" N	87º32' 41.031" E
P12	25º14' 53.572" N	87º32' 40.645" E
P13	25º14' 54.042" N	87º32' 39.214" E
P14	25º14' 52.529" N	87º32' 38.359" E
P15	25º14' 52.884" N	87º32' 35.888" E
P16	25º14' 51.112" N	87º32' 35.006" E
P17	25º14' 51.200" N	87º32' 34.854" E

LAND DETAILS

Khata no.	Plot no.
17	71
12	72 & 88 (P)
02	73

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 18.01.2018 to 17.01.2028.
2	CO	:	The CO, Mandro vide memo no. 458/Ra., dated 06.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid certificate	:	DMO, Sahibganj vide memo no. 1244/M, dated 16.11.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2197, dated 30.12.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 1761, dated 02.12.2016 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. 03, Page no. 128).
7	Gram Sabha	:	Gram Sabha conducted on 15.03.2012.
8	Scheme / Mine Plan Approval	:	i. Mining Plan approved by DMO, Sahibganj vide memo no. 3178/M, dated 16.12.2016. ii. Mining Scheme approved by DMO, Sahibganj vide letter no. 07, dated 04.01.2022. iii. Revised Mining Plan approved by DMO, Sahibganj vide letter no. 895/M, dated 13.09.2024.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/44, dated 27.03.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 1996, dated 26.09.2023.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2183801 /2018/498, dated 11.05.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-20531153 /2024/1796, dated 27.11.2024.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1249/M, dated 16.11.2024.
14	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	:	Mechanized Method	
2	Quarry Area	:	2.12 Ha	Life of Mine – Upto the lease period i.e. 18.01.2018 to 17.01.2028.
3	Waste Generation	:	59585 cum	
4	Stripping Ratio	:	9:50	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	98 m AMSL	
8	Ground Level Elevation	:	87 m AMSL	
9	Ultimate Working Depth	:	55 m AMSL	
10	Water Table	:	Post Monsoon – 48 m AMSL Pre Monsoon – 44 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	16 Kg/day slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 246 liters / day (73.8 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
Development Year (2024-2025)	50681.25	2.7	136839.37	168	456	59585	198
Development Year (2025-2026)	50681.40	2.7	136839.78	168	456	0	0
Development Year (2026-2027)	50681.83	2.7	136840.94	168	456	0	0
Total	**152044.48**	**2.7**	**410520.09**	**168 (Max.)**	**456 (Max.)**	**59585**	**198**

Land Use

SL	Pattern	Existing Land Use (Ha)	At the end of approved modified scheme period (in Ha)	At Ultimate Stage (in Ha)

1	Quarry	0.84	1.66	1.66 (1.66 area shall be left as rain water harvesting purpose)
2	Waste Dump	0.00	0.00	Nil
3	Main Road	0.06	0.00	Comes Under Excavation
4	Infrastructure	0.00	0.00	Comes Under Excavation
5	Plantation a green belt along safety zone	0.00	0.46	0.46
	TOTAL	**0.90**	**2.12**	**2.12**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.46 Ha	736
2	Along Approach Road		354 m	472
TOTAL				**1208 Trees**

- 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.

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	Plantation 800 X 472 = Rs 3,77,600 (Gabion Plantation along approach road) 400 X 736 = Rs.2,94,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,72,000	67,200

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
3	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**		2,03,220
Total		**6,72,000**	**5,70,420**

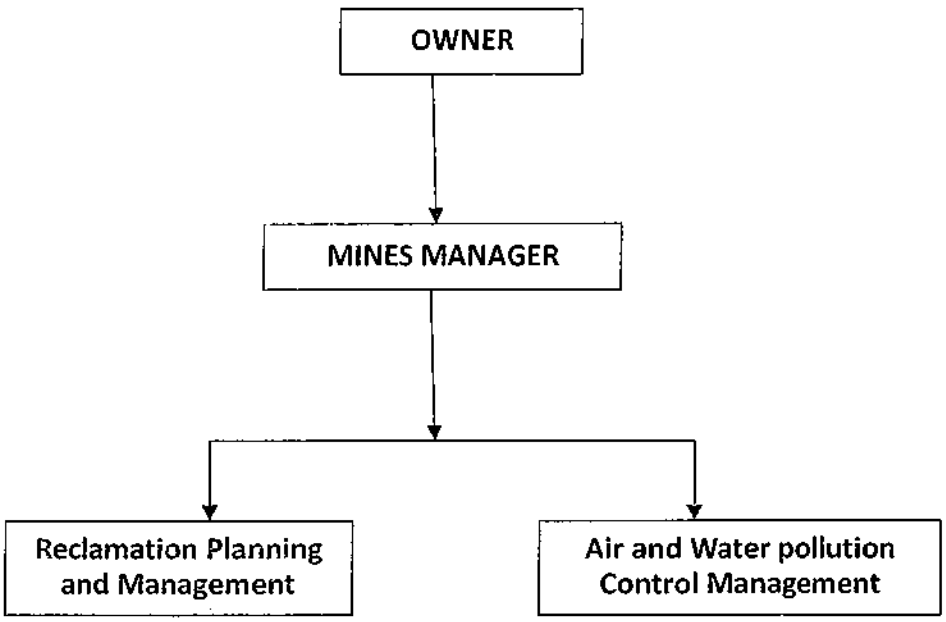
Environment Monitoring Programme:

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

59585 cum. 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 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 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 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 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, thereby 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, injuryor 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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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 Chuwe Stone Mine of M/s Bajrang Stone (Prop. : Shri Alok Ranjan), Village : Chuwe, P.S. : Mirjachowki, Distt. : Sahibganj, Jharkhand (2.12 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 "*EkPed Ma KeNaam*" 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.

Pre employment Occupational health check up for employees to be done and hereafter at annual interval for PLFT, Audiometry and other required tests . mmary findings of same to submitted along with 6 monthly compliance.

e use of Quality PPEs equivalent not less than 3M make. Records of same to be ned and submitted with 6 monthly compliance report with Geo-Tagged phs.

erable areas unmanned. Ensure rotation of duties. Records to be d submitted with 6 monthly compliance report.

of terms & conditions mentioned in EC can lead to revocation /

****

10. Gadwa Stone Mine of M/s Vidyarthi Stone Works (Prop. : Shri Parmanand Pandey), Village : Gadwa, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (4.455 Ha).

(Proposal no.: SIA/JH/MIN/ 517282 /2025)

The PA vide letter dated 09.03.2025 requested for withdrawal of the proposal. Hence, the Committee recommends for withdrawal of the project proposal.

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11. Chuwa Stone Deposit - I of M/s Mahaveer Engicons Pvt. Ltd., Village : Chuwa, Thana : Jirwabadi, Distt. : Sahibganj, Jharkhand (2.833 Ha).

(Proposal no.: SIA/JH/MIN/ 523706 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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: 83328Cum. / annum or 224986 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chuwa Stone Deposit-I	
2	Lessee:	:	M/s Mahaveer Engicons Pvt. Ltd. Director: Sri Pranay Kumar Sahu & Sri Shobhit Raj Sahu	
3	Lessee Address	:	M/s Mahaveer Engicons Pvt. Ltd. Director:Sri Pranay Kumar Sahu & Sri Shobhit Raj S Mauza: Demba, Block: Borio, Sahibganj	
4	Lease Area	:	2.833 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 118.25 Lakhs	Recu Lak
7	EMP Budget	:	Capital Cost: Rs. 9.125 Lakhs	R
8	New or Expansion	:	New	

9	Mineable Reserves	:	cum.: 5,86,644cum	Tonnes: 15,83,939 tons
10	Mine Life	:	8 years.	
11	Man power	:	17Person	
12	Water Requirement	:	6.34 KLD (Drinking: 0.255 KLD, Dust Suppression: 1.440KLD, Plantation: 4.65KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	60 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Ganga river at 5 km Notrh direction.	
17	Nearest Habitation	:	Jhagruchauki Village – 4.14 Km in NEDirection	
18	Nearest Rail Station	:	Karamtola Railway Station at aerial distance of 4.6 km in NW direction.	
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 122.39 km SW direction	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Sahibganj. letter no.- 1481 Dated- 31/07/2017	
21	Road & Highways	:	The distance of Approach Road is 0.360 Km. The NH-33 Sahibganj-Bhagalpur road is 3. Km away from the applied lease area in northem side.	

CO-ORDINATES

Point Name	Longitude	Latitude
1	Latitude 25° 12' 54.44" N to 25° 13' 3.01" N	
2	Longitude 87° 34' 32.67" E to 87° 34' 41.90" E	

LAND DETAILS

Khata no.	Plot no.
04	3 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 780/M, dated 17.08.2024.
2	CO	:	The CO, Mandro vide memo no. 08 (Mu)/Ra., dated 14.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1314/M, dated 06.12.2024 certified that 02 other mining lease area (9.00 Acre & 7.25 Acre)

			exists within 500 meters radius from proposed project site and total area is 23.25 Acre.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 3290, dated 19.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 1481, dated 31.07.2017 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 Sahibganj District (Sl. no. 38, Page no. 169).
7	Gram Sabha	:	Gram Sabha conducted on 04.04.2017.
8	Mine Plan Approval	:	Mining plan approved by District Mining Officer, Sahibganj vide Letter No. 1414, dated 20.12.2024.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 273/M, dated 13.02.2025 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
10	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	:	2.833 Ha	Life of Mine – 8year
3	Waste Generation	:	67085cum	
4	Stripping Ratio	:	03:10	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	268m–238m AMSL	
8	Ground Level Elevation	:	238 AMSL	
9	Ultimate Working Depth	:	43 m AMSL	
10	Water Table	:	Post Monsoon – 207m AMSL Pre Monsoon – 203 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	85.04 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 246 liters / day (73.8KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	78297	2.7	211402	260	704	27151	90
2nd	79228	2.7	213916	264	713	7992	26
3rd	79880	2.7	215675	266	718	4204	14
4th	81928	2.7	221206	273	737	4312	14
5th	83328	2.7	224986	277	749	23426	78
Total	**402661**		**1087186**	**277 (max)**	**749 (max)**	**67085**	**90 (max)**

Land Use pattern

SL	Pattern of Utilization	Existing Land Use (Ha)	At the end of plan period (Ha)	Conceptual period (Ha)
1	Quarry	Nil	1.911 (0.145ha area shall be backfilled)	2.163 (0.254ha area shall be backfilled, 1.276ha area shall be left as water reservoir and 0.634ha left as dead benches).
2	Waste Dump	Nil	Nil (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
3	Road	Nil	0.005	0.000
4	Safety Zone Plantation	Nil	0.670	0.670
5	Total	0.000	2.586	2.833
6	Unused Area	2.833	0.247	0.000
	Total Lease Area	**2.833**	**2.833**	**2.833**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone/ Dumping/ Offices/ Store etc.		0.670 Ha	1072
2	Along Approach		360m	480

	Road			
TOTAL				**1,552**

- 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.

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	Plantation 480 X 800 = Rs 3,84,000 (Gabion Plantation along approach road) 1072 X 400 = 4,28,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	8,12,800	81,280
3	Fencing	100,000	-
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		**9,12,800**	**5,84,500**

Environment Monitoring Programmed

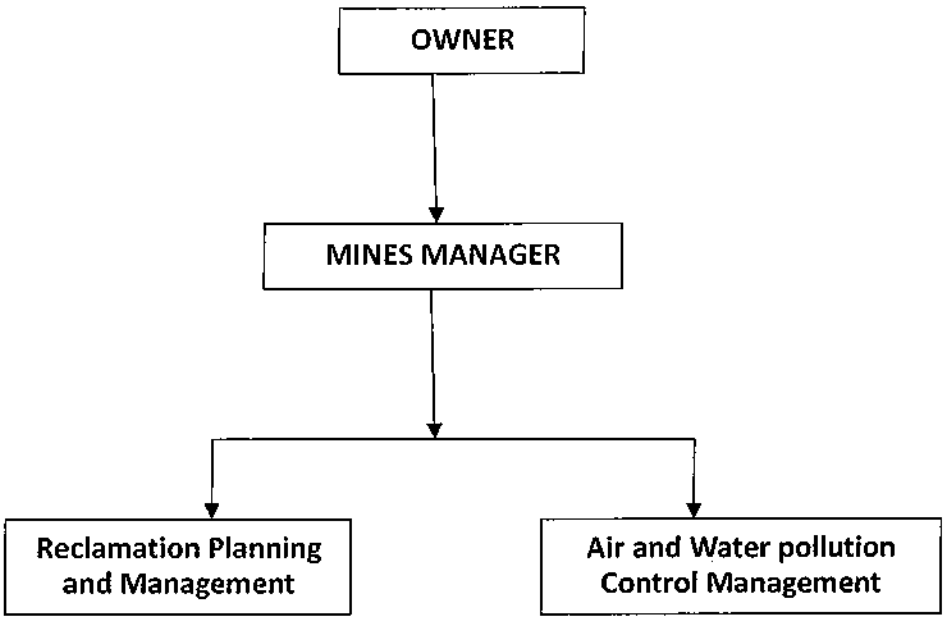
SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Note: Monitoring period Dec 2024 to Feb 2025

Solid Waste Management

67085cum. 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 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 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 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 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, thereby 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, injuryor 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 08, 09, 10, 11 & 12.03.2025, 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.

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12. **Chandipur Stone Mine of M/s Nayak Construction (Partner : Shri Subash Chandra Nayak), Village : Chandipur, Thana : Barmasiya, Distt. : Bokaro, Jharkhand (1.93 Ha).**

(Proposal no.: SIA/JH/MIN/ 500219 /2024)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 54,540 Cum. / annum or 1,48,349 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chandipur Stone Mine	
2	Lessee:	:	M/s Nayak Construction Shri Subhash Chandra Nayak	
3	Lessee Address	:	M/s Nayak Construction Shri Subhash Chandra Nayak S/O Late Bhusan Chandra Gorai R/o Village+ P.O – Chandra, Thana – Siyaljori, Dist – Bokaro (Jharkhand)	
4	Lease Area	:	1.93 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 102.61Lakhs	Recurring Cost: Rs. 11.27 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 8.75Lakhs	Recurring Cost: Rs. 4.875 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 1,56,240 cum	Tonnes: 4,24,973 tons
10	Mine Life	:	5 years.	
11	Man power	:	26Person	
12	Water Requirement	:	5.09 KLD (Drinking: 0.390 KLD, Dust Suppression: 1.640 KLD, Plantation: 3.06 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	60 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Bokaro town - 24.36 km in NW direction	
17	Nearest Habitation	:	Bokaro town - 24.36 km in NW direction	

18	Nearest Rail Station	:	Bhojudih Junction is at aerial distance of 13.50 km NE direction.
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 108.33 km SW direction
20	Nearest Forest	:	Letter no.- 1409 Dated- 23.09.2024 certified that, One lease exists within 500 m radius from the proposed project site & Total lease area is less than 5 Ha.
21	Road & Highways	:	A well motorable road is connected to the Mine Site at a distance of 0.03 Km SE direction. (Chandankiyari – Purulia) Road is at aerial distance of 0.69 Km West Direction.

CO-ORDINATES

Point ID	Latitude	Longitude
1	23°33'13.91113044"N	086°21'18.35491906"E
2	23°33'13.32341211"N	086°21'18.27821588"E
3	23°33'12.77563514"N	086°21'18.06403596"E
4	23°33'12.33749901"N	086°21'18.02294019"E
5	23°33'11.78315591"N	086°21'17.88552202"E
6	23°33'10.94402815"N	086°21'17.56644833"E
7	23°33'10.04181796"N	086°21'17.14425873"E
8	23°33'09.12947365"N	086°21'16.77667011"E
9	23°33'09.18727539"N	086°21'15.97323841"E
10	23°33'09.20101901"N	086°21'15.40351984"E
11	23°33'09.44349567"N	086°21'15.44742672"E
12	23°33'09.51810385"N	086°21'15.02549229"E
13	23°33'10.05293861"N	086°21'15.20011585"E
14	23°33'10.49316294"N	086°21'15.24362115"E
15	23° 33' 10.66495769" N	086° 21' 15.20513570" E
16	23° 33' 10.52844222" N	086° 21' 14.90394519" E
17	23° 33' 10.44948779" N	086° 21' 14.78976588" E
18	23° 33' 10.73932025" N	086° 21' 14.45898642" E
19	23° 33' 10.72655836" N	086° 21' 14.38402345" E
20	23° 33' 10.66078553" N	086° 21' 14.29085519" E
21	23° 33' 10.95332730" N	086° 21' 14.08952607" E
22	23° 33' 11.20660158" N	086° 21' 13.89248054" E
23	23° 33' 11.40686486" N	086° 21' 13.72220751" E
24	23° 33' 11.39606635" N	086° 21' 13.67508793" E
25	23° 33' 11.09370802" N	086° 21' 13.53158739" E
26	23° 33' 10.83748863" N	086° 21' 13.27671329" E
27	23° 33' 10.60384785" N	086° 21' 13.01005930" E
28	23° 33' 10.38787727" N	086° 21' 13.42771013" E
29	23° 33' 10.26418498" N	086° 21' 13.35488896" E
30	23° 33' 10.34603607" N	086° 21' 12.96165207" E

31	23° 33' 10.45266845" N	086° 21' 12.67165503" E
32	23° 33' 10.04336718" N	086° 21' 12.42695448" E
33	23° 33' 10.12779211" N	086° 21' 12.16458408" E
34	23° 33' 10.52101823" N	086° 21' 12.31859283" E
35	23° 33' 10.68495950" N	086° 21' 12.51456745" E
36	23° 33' 10.91896838" N	086° 21' 12.62252751" E
37	23° 33' 11.12703324" N	086° 21' 13.01810568" E
38	23° 33' 11.57080582" N	086° 21' 13.27135879" E
39	23° 33' 11.61301815" N	086° 21' 13.14285084" E
40	23° 33' 11.78438301" N	086° 21' 12.96548310" E
41	23° 33' 11.95955182" N	086° 21' 12.96461299" E
42	23° 33' 12.25798287" N	086° 21' 12.97257781" E
43	23° 33' 12.30117683" N	086° 21' 13.08716407" E
44	23° 33' 12.11698895" N	086° 21' 13.21754609" E
45	23° 33' 12.20803986" N	086° 21' 13.40635907" E
46	23° 33' 12.12674440" N	086° 21' 13.51512230" E
47	23° 33' 12.10876737" N	086° 21' 13.62582655" E
48	23° 33' 12.15392470" N	086° 21' 13.65688264" E
49	23° 33' 12.24178514" N	086° 21' 13.43815140" E
50	23° 33' 12.36007767" N	086° 21' 13.31312388" E
51	23° 33' 12.74796405" N	086° 21' 13.65139009" E
52	23° 33' 13.00920200" N	086° 21' 13.78995864" E
53	23° 33' 13.18415945" N	086° 21' 13.89976768" E
54	23° 33' 13.34713345" N	086° 21' 14.12200026" E
55	23° 33' 13.50471584" N	086° 21' 14.20625412" E
56	23° 33' 13.58804727" N	086° 21' 13.99859581" E
57	23° 33' 13.77964701" N	086° 21' 13.74918080" E
58	23° 33' 13.98082953" N	086° 21' 13.96858135" E
59	23° 33' 14.20563356" N	086° 21' 13.97072314" E
60	23° 33' 14.36662852" N	086° 21' 14.00813770" E
61	23° 33' 14.44056102" N	086° 21' 14.02794934" E
62	23° 33' 14.83323136" N	086° 21' 14.02292950" E
63	23° 33' 14.96612566" N	086° 21' 14.09053003" E
64	23° 33' 14.81028470" N	086° 21' 14.84551423" E
65	23° 33' 14.56909924" N	086° 21' 15.92504793" E
66	23° 33' 14.67585649" N	086° 21' 16.04070509" E
67	23° 33' 14.77420812" N	086° 21' 16.00496381" E
68	23° 33' 14.83249510" N	086° 21' 15.98823100" E
69	23° 33' 14.93986584" N	086° 21' 16.03340958" E
70	23° 33' 15.03220466" N	086° 21' 16.23453791" E
71	23° 33' 15.11012511" N	086° 21' 16.42830380" E
72	23° 33' 15.05061107" N	086° 21' 16.64194827" E
73	23° 33' 14.95268898" N	086° 21' 16.69395383" E
74	23° 33' 15.24050379" N	086° 21' 17.31179595" E

75	23° 33' 15.20301609" N	086° 21' 17.51747560" E
76	23° 33' 15.07048999" N	086° 21' 17.55763433" E
77	23° 33' 14.92414370" N	086° 21' 17.61267271" E
78	23° 33' 14.65033292" N	086° 21' 17.67382693" E
79	23° 33' 14.51431327" N	086° 21' 17.80321754" E
80	23° 33' 14.19072434" N	086° 21' 17.93218146" E
81	23° 33' 13.96101192" N	086° 21' 18.22989154" E

LAND DETAILS

Khata no.	Plot no.
18 & 36	225, 226, 227, 263, 264, 265 to 292 & 297

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 958/Khanan, dated 21.06.2024.
2	CO	:	The CO, Chandankiyari vide letter no. 315, dated 27.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyan.
3	DMO	:	DMO, Bokaro vide memo no. 1409/M, dated 23.09.2024 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. 1848, dated 23.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Bokaro Forest Division vide letter no. 1269, dated 27.05.2023 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 Bokaro District (Sl. no. 08, Page no. 85).
7	Gram Sabha	:	BDO, Chandankiyari (Bokaro) vide letter no. 1638, dated 10.10.2023 informed that Gram Sabha conducted on 08.07.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1241/M, dated 17.08.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay 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	:	1.93 Ha	Life of Mine – 5year
3	Waste Generation	:	14805 cum	
4	Stripping Ratio	:	01:01	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	171 m–168 m AMSL	
8	Ground Level Elevation	:	168 AMSL	
9	Ultimate Working Depth	:	31.5 m AMSL	
10	Water Table	:	Post Monsoon –128m AMSL Pre Monsoon -123m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	53.82 kg/day slurry explosives /day	
13	Diesel/Fuel requirement	:	HSD – 343 liters / day (102.9 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum recoverable 95%	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	54540	2.72	148349	182	494	14805	49
2nd	41652	2.72	113293	139	378	0	0
3rd	28512	2.72	77553	95	259	0	0
4th	19440	2.72	52877	65	176	0	0
5th	12096	2.72	32901	40	110	0	0
Total	156240		424973	182 MAX.	494 MAX.	14805	49

Land Use pattern

SL	Pattern of Utilization	Present/Existing land use pattern in (Ha)	Land used at the conceptual stage ie end of mine life in (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	2.42	Water body
2	Offices/Store etc.	0.000	0.03	Plantation
3	Dumping	0.000	0.40	Plantation
4	Mining Road	0.000	0.06	Water body
5	Garland drain	0.000	0.09	-
6	Settling Tank	0.000	0.02	-
7	Green belt/ Safety Zone	0.000	1.44	Green belt
8	Stone Stock yards	0.000	0.000	-
9	Green Belt	0.000	0.31	Plantation
	TOTAL	4.77	4.77	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone,Dumping Area, Unutilized Area, and Office Area.		0.58 Ha	928
2	Along Approach Road		0.410m	274
TOTAL				**1,202**

- 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.

- **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	Plantation 448 X 800 = Rs 3,58,400 (Gabion Plantation along approach road) 1122 X 400 = 4,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	8,75,000	87,500
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		**9,75,000**	**5,90,720**

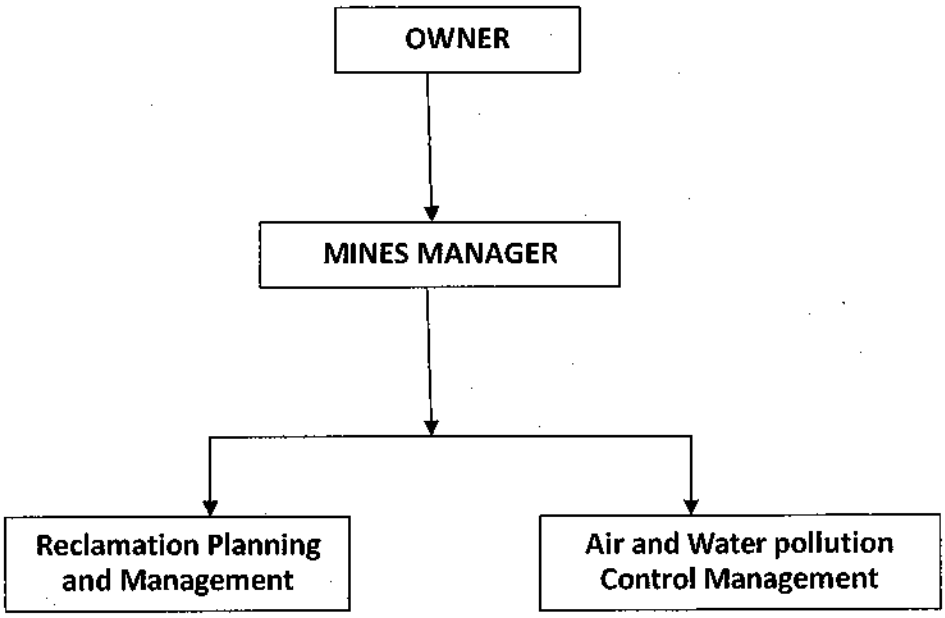
Environment Monitoring Programmed

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

14805cum. 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 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 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 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 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, thereby 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)

Consequence)					
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 Chandipur Stone Mine of M/s Nayak Construction (Partner : Shri Subash Chandra Nayak), Village : Chandipur, Thana : Barmasiya, Distt. : Bokaro, Jharkhand (1.93 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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13. Chorgawan Stone Mine of M/s Babulal Enterprises (Prop. : Shri Babulal Saw), Village : Chorgawan, Thana : Mahuatand, Distt. : Bokaro, Jharkhand (0.607 Ha).
(Proposal no.: SIA/JH/MIN/ 521547 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 7,452Cum. / annum or 20,120 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chorgawan Stone Mine	
2	Lessee:	:	M/s Babulal Enterprises Proprietor: Shri Babulal Saw	
3	Lessee Address	:	M/s Babulal Enterprises Proprietor: Shri Babulal Saw S/o Shri Teklal Saw R/o Village- Gangpur, P.O- Badkipunnu, Thana- Mahuatand, Dist.- Bokaro.	
4	Lease Area	:	0.607 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 69.92 Lakhs	Recurring Cost: Rs. 6.37

				Lakhs
7	EMP Budget	:	Capital Cost: Rs. 6.724 Lakhs	Recurring Cost: Rs. 5.604Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 21,636cum	Tonnes: 58,417tons
10	Mine Life	:	5 years.	
11	Man power	:	18Person	
12	Water Requirement	:	6.16 KLD (Drinking: 0.27 KLD, Dust Suppression: 3.20KLD, Plantation: 2.69KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	Yes - 30 TPH	
16	Nearest Water Body	:	Damodar river at 7.17 km SE direction.	
17	Nearest Habitation	:	Gangpur Village – 1.04 Km in SE Direction	
18	Nearest Rail Station	:	Jogeshwar BiharRailway Station at aerial distance of 7.7 km in North West direction.	
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 60 km SW direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Bokaro. letter no.- 2615 Dated- 04.12.2023	
21	Road & Highways	:	A well motarable road is connected to the Mine Site at a distance of 0.8 Km East direstion. (Chorgawan-Gumia) Road is at aerial distance of 1.52 Km North Direction.	

CO-ORDINATES

Point ID	Latitude	Longitude
1	23° 43' 43.20104124" N	085° 42' 02.19931178" E
2	23° 43' 42.67258979" N	085° 42' 02.24224750" E
3	23° 43' 42.29016474" N	085° 42' 02.23681418" E
4	23° 43' 41.42549621" N	085° 42' 01.96351844" E
5	23° 43' 41.21158121" N	085° 42' 02.08521977" E
6	23° 43' 40.32131414" N	085° 42' 01.57301825" E
7	23° 43' 39.82170230" N	085° 42' 01.38436629" E
8	23° 43' 40.02605391" N	085° 42' 00.78590197" E

9	23° 43' 40.23040485" N	085° 42' 00.18743717" E
10	23° 43' 40.41884433" N	085° 41' 59.63556871" E
11	23° 43' 40.63910473" N	085° 41' 58.99050609" E
12	23° 43' 41.31879367" N	085° 41' 59.48203668" E
13	23° 43' 41.59725255" N	085° 41' 59.63284276" E
14	23° 43' 41.92520919" N	085° 41' 59.66944971" E
15	23° 43' 41.89888202" N	085° 41' 59.79213860" E
16	23° 43' 41.90724051" N	085° 42' 00.29920547" E
17	23° 43' 41.95243805" N	085° 42' 00.31655192" E
18	23° 43' 42.10287857" N	085° 42' 00.18604795" E
19	23° 43' 42.47745522" N	085° 42' 00.40921574" E
20	23° 43' 43.06610757" N	085° 42' 00.76372151" E
21	23° 43' 43.72050837" N	085° 42' 01.14426832" E
22	23° 43' 43.46077507" N	085° 42' 01.67179033" E

LAND DETAILS

Khata no.	Plot no.
15	510 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 955/Khanan, dated 19.06.2024.
2	CO	:	The CO, Gomiya vide letter no. 1225, dated 13.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Bokaro vide memo no. 1411/M, dated 23.09.2024 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. 2856, dated 09.12.2023 certified that the proposed project site is outside Eco

			Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Bokaro Forest Division vide letter no. 2615, dated 04.12.2023 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 Bokaro District (Sl. no. 13, Page no. 86).
7	Gram Sabha	:	BDO, Gomiya vide letter no. 23, dated 03.01.2024 informed that Gram Sabha conducted on 02.01.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1340/M, dated 06.09.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay 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	:	0.607 Ha	Life of Mine – 5year
3	Waste Generation	:	2698cum	
4	Stripping Ratio	:	09:25	
5	Working Days	:	300	
6	Benches: size	:	3 m x 3 m	
7	Elevation of Mine	:	318m–313m AMSL	
8	Ground Level Elevation	:	318 AMSL	
9	Ultimate Working Depth	:	16 m AMSL	
10	Water Table	:	Post Monsoon – 283m AMSL Pre Monsoon – 279 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	8.9 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 232 liters / day (69.6 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.

1st	7452	2.7	20120	25	67	2698	9
2nd	5670	2.7	15309	19	51	0	0
3rd	4104	2.7	11081	14	37	0	0
4th	2754	2.7	7436	9	25	0	0
5th	1656	2.7	4471	6	15	0	0
Total	**21636**		**58417**	**25 (Max.)**	**67 (Max.)**	**2698**	9

Land Use pattern

SL	Pattern of Utilization	Present/Existing land use pattern in (Ha)	Proposed Land use for current plan period (Ha)	Land to be used in remaining period of the life of the mine (Ha)	Land used at the conceptual stage ie end of mine life in (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	0.251	0.000	0.251	Water body
2	Offices/Store etc.	0.000	0.004	0.000	0.004	Plantation
3	Dumping	0.000	0.000	0.000	0.000	Plantation
4	Mining Road	0.000	0.008	0.000	0.008	Water body
5	Garland drain	0.000	0.016	0.000	0.016	-
6	Settling Tank	0.000	0.004	0.000	0.004	-
7	Green belt/ Safety Zone	0.000	0.223	0.000	0.223	Green belt
8	Stone Stock yards	0.000	0.000	0.000	0.000	
9	Crusher	0.000	0.101	0.000	0.101	-
10	Unutilized	0.000	0.000	0.000	0.000	-
	TOTAL	**0.607**	**0.607**	**0.607**	**0.607**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.223 Ha	357
2	Offices/Store etc.		0.004 Ha	6
3	Along Approach Road		800m	357
TOTAL				**897**

- 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.

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	Plantation 534 X 800 = Rs 4,27,200 (Gabion Plantation along approach road) 363 X 400 = Rs. 1,45,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	5,72,400	57,240
3	Fencing	100,000	-
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		**6,72,400**	**5,60,460**

Environment Monitoring Programmed

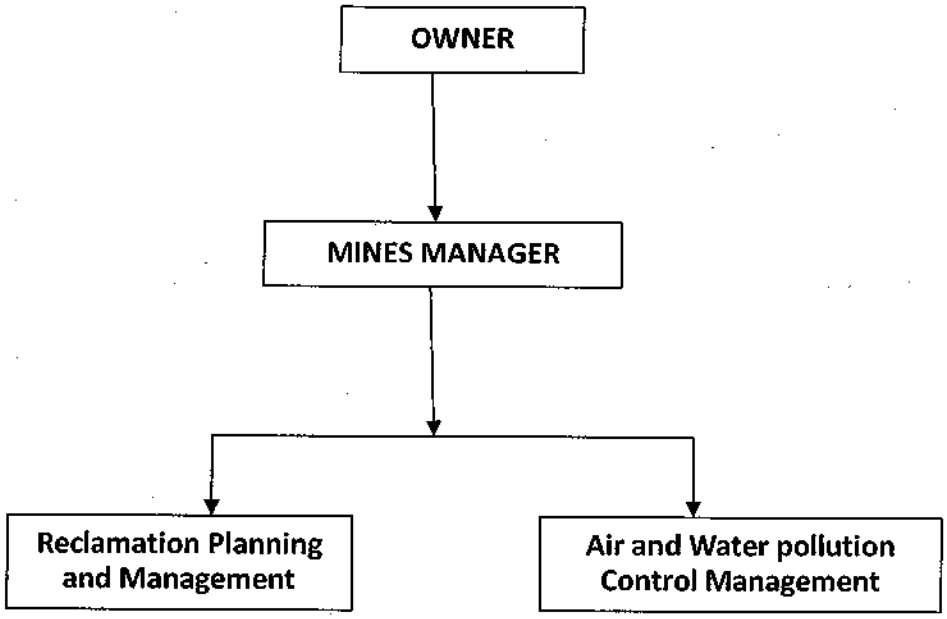
Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly

3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Solid Waste Management

2698cum. 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 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 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 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 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, thereby 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, injuryor 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**"

<u>Preventive Measures:</u>

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 Chorgawan Stone Mine of M/s Babulal Enterprises (Prop. : Shri Babulal Saw), Village : Chorgawan, Thana : Mahuatand, Distt. : Bokaro, Jharkhand (0.607 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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14. Gangpur Stone Mine of M/s Maa Kunti Enterprises (Prop. : Shri Santosh Kumar Saw), Village : Gangpur, Thana : Gomia, Distt.: Bokaro, Jharkhand (2.051 Ha).

(Proposal no.: SIA/JH/MIN /493033/2024)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 50,046Cum. / annum or 1,35,124 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Gangpur Stone Mine	
2	Lessee:	:	Maa Kunti Enterprises. Proprietor: Shri Santosh Kumar Saw	
3	Lessee Address	:	Maa Kunti Enterprises. Proprietor: Shri Santosh Kumar Saw S/O Shri Sukhdev Saw R/o Village- Amli Daru, P.O - Kariyadpur, Thana – Daru, Dist – Hazaribagh (Jharkhand)	
4	Lease Area	:	2.051 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 102.61 Lakhs	Recurring Cost: Rs. 9.77

				Lakhs
7	EMP Budget	:	Capital Cost: Rs. 8.36 Lakhs	Recurring Cost: Rs. 4.836Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 1,33,140 cum	Tonnes: 3,59,478 tons
10	Mine Life	:	5 years.	
11	Man power	:	30Person	
12	Water Requirement	:	5.462 KLD (Drinking: 0.450 KLD, Dust Suppression: 1.112KLD, Plantation: 3.9KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	Yes – 80 TPH	
16	Nearest Water Body	:	Bhairabi Nadi at 8.96 km SE direction.	
17	Nearest Habitation	:	Gangpur Village – 0.590 Km in South Direction	
18	Nearest Rail Station	:	Jogeshwar Bihar Railway Station at aerial distance of 7.28 km in NW direction.	
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 58.70 km SW direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer, Bokaro. letter no.- 2425 Dated: 02/11/2023	
21	Road & Highways	:	A cart road is well connected to applied lease area from (Kuju-Gomia road), is at areal distance 2.12 km North Direction from the mine site.	

CO-ORDINATES

Sl. no.	Latitude	Longitude
1	23° 43' 28.52795893" N	085° 41' 47.50509931" E
2	23° 43' 28.01644088" N	085° 41' 48.17105750" E
3	23° 43' 27.74247347" N	085° 41' 48.63503710" E
4	23° 43' 26.68613037" N	085° 41' 47.68523315" E
5	23° 43' 25.67090911" N	085° 41' 46.48813235" E
6	23° 43' 25.07354795" N	085° 41' 45.69471473" E
7	23° 43' 24.43647703" N	085° 41' 45.41652714" E
8	23° 43' 24.52868476" N	085° 41' 45.18573581" E
9	23° 43' 24.79545581" N	085° 41' 44.56269066" E
10	23° 43' 24.88471633" N	085° 41' 44.36412682" E
11	23° 43' 25.32077363" N	085° 41' 44.44250912" E
12	23° 43' 25.61564711" N	085° 41' 44.50331898" E
13	23° 43' 25.78151521" N	085° 41' 44.05925453" E

14	23° 43' 26.09489379" N	085° 41' 44.07065699" E
15	23° 43' 26.16046588" N	085° 41' 43.87746277" E
16	23° 43' 26.22453517" N	085° 41' 43.70654137" E
17	23° 43' 26.24150985" N	085° 41' 43.50269289" E
18	23° 43' 26.30755901" N	085° 41' 43.09630084" E
19	23° 43' 26.34271650" N	085° 41' 42.86654566" E
20	23° 43' 26.64113879" N	085° 41' 42.88939995" E
21	23° 43' 26.69958415" N	085° 41' 42.86116796" E
22	23° 43' 26.75967731" N	085° 41' 42.71996307" E
23	23° 43' 26.89168947" N	085° 41' 42.44042296" E
24	23° 43' 26.98286299" N	085° 41' 42.27601851" E
25	23° 43' 26.96810842" N	085° 41' 42.19192913" E
26	23° 43' 27.37034709" N	085° 41' 41.28322309" E
27	23° 43' 27.72661554" N	085° 41' 40.42492050" E
28	23° 43' 27.82320226" N	085° 41' 39.20734056" E
29	23° 43' 27.94161123" N	085° 41' 37.91005956" E
30	23° 43' 28.46808033" N	085° 41' 37.96489950" E
31	23° 43' 28.37248140" N	085° 41' 38.17488946" E
32	23° 43' 29.18048095" N	085° 41' 40.02547962" E
33	23° 43' 29.39904027" N	085° 41' 41.09042559" E
34	23° 43' 29.45800478" N	085° 41' 41.87493409" E
35	23° 43' 29.44471284" N	085° 41' 42.46506587" E
36	23° 43' 29.20098095" N	085° 41' 42.41977659" E
37	23° 43' 29.04948700" N	085° 41' 42.38247520" E
38	23° 43' 28.94705425" N	085° 41' 42.90403931" E
39	23° 43' 29.34090745" N	085° 41' 43.06671730" E
40	23° 43' 29.29247038" N	085° 41' 43.33325793" E
41	23° 43' 29.09950458" N	085° 41' 44.07604355" E
42	23° 43' 28.85970713" N	085° 41' 44.57046567" E
43	23° 43' 28.68023238" N	085° 41' 45.18606893" E
44	23° 43' 28.61042293" N	085° 41' 45.51297446" E
45	23° 43' 28.52061623" N	085° 41' 46.43731653" E
46	23° 43' 28.48668418" N	085° 41' 47.06716815" E

LAND DETAILS

Khata no.	Plot no.
07	323 (P), 324 & 326 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 957/Khanan, dated 21.06.2024.
2	CO	:	The CO, Gomia vide letter no. 1184, dated 27.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 1177/M, dated 02.08.2024 certified that 01 other mining lease area (3.44 Acre) exists within 500 m radius from proposed project site and total area is 8.51 Acre (less than 5 Ha.).
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2581, dated 19.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Bokaro Forest Division vide letter no. 2425, dated 02.11.2023 certified that the distance of notified forest is 260 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Bokaro District (Sl. no. 14, Page no. 86).
7	Gram Sabha	:	BDO, Gomia vide letter no. 2310, dated 02.11.2023 informed that Gram Sabha conducted on 29.09.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1099/M, dated 22.07.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	0.882 Ha	Life of Mine – 5year
3	Waste Generation	:	18262cum	
4	Stripping Ratio	:	09:25	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	323m–321m AMSL	
8	Ground Level Elevation	:	321 AMSL	
9	Ultimate Working Depth	:	290 m AMSL	
10	Water Table	:	Post Monsoon – 282m AMSL Pre Monsoon – 277 m AMSL	

11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	44.55 kg Nitro mix explosives/day
13	Diesel/Fuel requirement	:	HSD – 269 liters / day (80.7 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	50046	2.7	135124	167	450	18262	61
2nd	36978	2.7	99841	123	333	0	0
3rd	25638	2.7	69223	85	231	0	0
4th	14766	2.7	39868	49	133	0	0
5th	5712	2.7	15422	19	51	0	0
Total	**133140**		**359478**	**167 (max)**	**450 (max)**	**18262**	**61 (max)**

Land Use pattern

SL	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Proposed Land use for current plan period (Ha.)	Land to be used in remaining period of the life of the 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	Quarry	0.000	0.882	0.000	0.882	Water body
2	Offices/ Store etc.	0.000	0.004	0.000	0.000	Plantation
3	Dumping	0.000	0.068	0.000	0.068	Plantation
4	Mining Road	0.000	0.024	0.000	0.024	Water body
5	Garland drain	0.000	0.032	0.000	0.032	-
6	Settling Tank	0.000	0.028	0.000	0.028	-
7	Safety Zone	0.000	0.700	0.000	0.700	Green Belt
8	Stone Stock yards	0.000	0.000	0.000	0.000	-
9	Crusher	0.000	0.169	0.000	0.169	-

10	Unutilized	2.051	0.141	0.000	0.141	Green Belt
	Total Lease Area	**2.051**	**2.051**	**2.051**	**2.051**	**-**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.70 Ha	1120
2	Along Approach Road		278m	184
TOTAL				**1304**

- 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.

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	Plantation: 184 X 1500 = Rs 276000 (Gabion Plantation along approach road) 1120 X 500 = 560000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	8,36,000	83,600
3	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**	--	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022		
Total		8,36,000	4,83,600

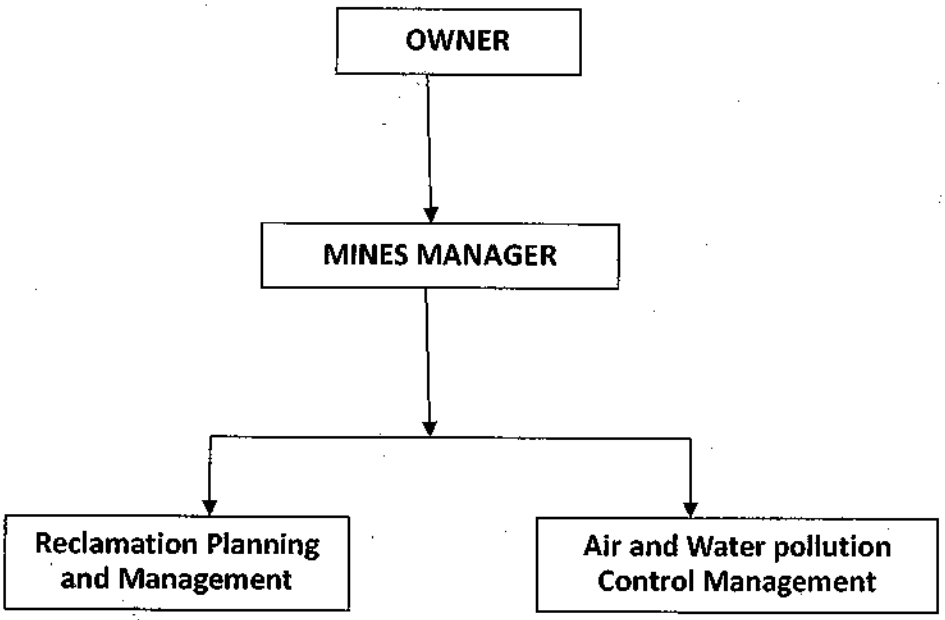
Environment Monitoring Programmed

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

18262cum. 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 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 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 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 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, thereby 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, injuryor 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.

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 Gangpur Stone Mine of M/s Maa Kunti Enterprises (Prop. : Shri Santosh Kumar Saw), Village : Gangpur, Thana : Gomia, Distt.: Bokaro, Jharkhand (2.051 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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. **Surjyadi Stone Mine of M/s Nayak Construction (Partner : Shri Subhash Chandra Nayak), Village : Surjyadi, Thana : Siyaljori, Distt.: Bokaro, Jharkhand (2.52 Ha).**

(Proposal no.: SIA/JH/MIN /493438/2024)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 61,584Cum. / annum or 1,66,277 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Surjyadi Stone Mine	
2	Lessee:	:	M/S Nayak Construction Partner: Shri Subhash Chandra Nayak	
3	Lessee Address	:	M/S Nayak Construction Partner: Shri Subhash Chandra Nayak Vill. + Post – Chandra, Thana – Siyaljori, Distt. – Bokaro, Jharkhand	
4	Lease Area	:	2.52 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 137.05 Lakhs	Recurring Cost: Rs. 12.55Lakhs
7	EMP Budget	:	Capital Cost: Rs. 22.95 Lakhs	Recurring Cost: Rs. 6.295Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 2,58,120cum	Tonnes: 6,96,924tons
10	Mine Life	:	5 years.	
11	Man power	:	30Person	
12	Water Requirement	:	9.96 KLD (Drinking: 0.45 KLD, Dust Suppression: 4.856KLD, Plantation: 4.66KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Gada river – 0.034 Km in NW direction.	
17	Nearest Habitation	:	Kochagora Village – 0.758 Km in S-W	
18	Nearest Rail Station	:	Talgaria Railway Station at aerial distance of 8.01 km in NE direction.	

19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 106.02 km SW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. Letter no – 1989 Dt- 30/08/2023 Nearest Forest is about 32.78 km (aerial distance) away from the ML area (SW direction)
21	Road & Highways	:	(Chandankiyari – Chas) Road is at areal distance of 2.40 Km South Direction.

CO-ORDINATES

Point	Latitude	Longitude
1	24°29'04.9" N	87°37'48.6" E
To		
26	87°37'48.6" E	87°37'42.6" E

LAND DETAILS

Khata no.	Plot no.
19	662 (P) to 667, 670 to 674 (P), 679 (P), 680 (P) to 683 (P), 684 (P) to 689 (P), 690 (P), 691 (P), 692, 694 (P) & 695 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 956/Khanan, dated 21.06.2024.
2	CO	:	The CO, Chandankiyari (Bokaro) vide letter no. 765, dated 23.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 1245/M, dated 20.08.2024 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. 1849, dated 23.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Bokaro Forest Division vide letter no. 1521, dated 05.07.2023 certified that the distance of notified forest is 260 meter from proposed project site.

6	DSR	:	This project is mentioned in approved DSR of Bokaro District (Sl. no. 09, Page no. 85).
7	Gram Sabha	:	BDO, Chandankiyari (Bokaro) vide letter no. 1638, dated 10.10.2023 informed that Gram Sabha conducted on 22.09.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1199/M, dated 08.08.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	2.52 Ha	Life of Mine – 5year
3	Waste Generation	:	22932cum	
4	Stripping Ratio	:	07:25	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	186m–177m AMSL	
8	Ground Level Elevation	:	177 AMSL	
9	Ultimate Working Depth	:	150 m AMSL	
10	Water Table	:	Post Monsoon – 142m AMSL Pre Monsoon – 137m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	62.37kg Nitro mix explosives/day	
13	Diesel/Fuel requirement	:	HSD – 343 liters / day (103 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	61584	2.7	166277	205	554	22932	76
2nd	52704	2.7	142301	176	474	0	0
3rd	38280	2.7	103356	128	345	0	0
4th	50904	2.7	137441	170	458	0	0
5th	54648	2.7	147550	182	492	0	0

Total	258120		696924	205 (max)	554 (max)	22932	76

Land Use pattern

SL	Pattern of Utilization	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Stage Land Use i.e. End Of Life of Mine (Ha)	Area to be converted in the conceptual period.
1	Quarry	0.00	1.60	1.60	Water body
2	Offices/ Store etc.	0.00	0.01	0.01	Green Belt
3	Dumping	0.00	0.16	0.16	Green Belt
4	Mining Road	0.00	0.02	0.02	Water body
5	Garland drain	0.00	0.03	0.03	-
6	Settling Tank	0.00	0.01	0.01	-
7	Safety Zone	0,00	0.55	0.55	Greenbelt
8	Stone Stock yards	2.40	0.12	0.12	Greenbelt
9	Unutilized	0.00	1.60	1.60	Water body
	Total Lease Area	**2.40**	**2.52**	**2.52**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.55 Ha	880
2	Along Approach Road		1012 m	674
TOTAL				**1554**

- 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.

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	Plantation 1012 X 1500 = Rs 15,18,000 (Gabion Plantation along approach road) 1554 X 500 = 7,77,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	22,95,000	2,29,500
3	Environmental Monitoring (One Day Monitoring) Ambient Air (8 points) 24 hrs - Rs.32,000 Ground Water (2 point) -Rs.8,000 Noise (5 points) 24 hrs - Rs.10,000 Total -Rs. 50,000 (Per Season) At least two season in a Year -Rs. 50,000 x 2 = Rs. 1,00,000	--	1,00,000
Total		22,95,000	6,29,500

Environment Monitoring Programmed

SL. No.	Description	No. Of Monitoring Stations	Duration
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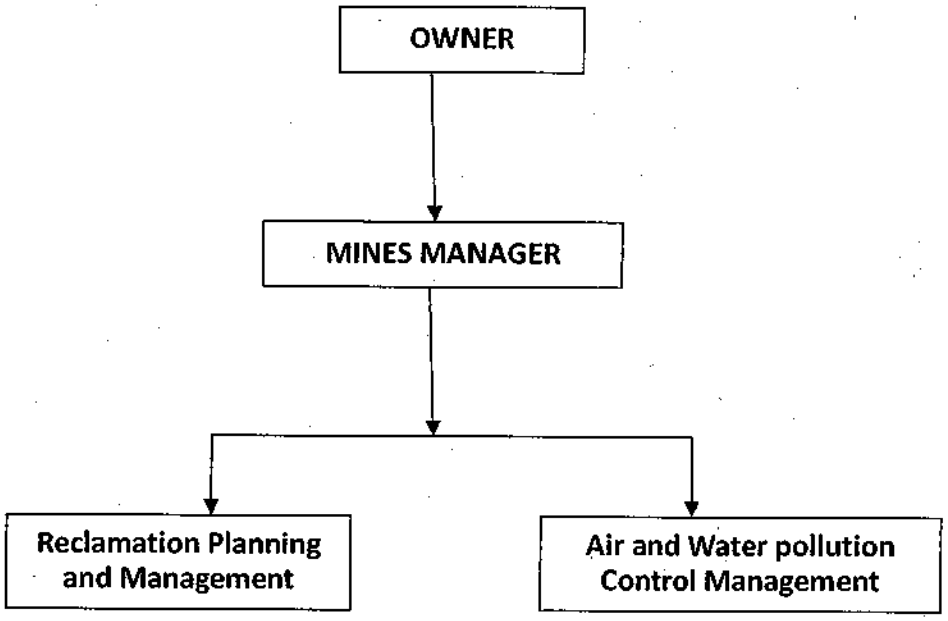

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Blasting – Blasting generates gases & dust. This effect would be mitigated by following measures.

- 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 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 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, thereby 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, injuryor 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 Surjyadi Stone Mine of M/s Nayak Construction (Partner : Shri Subhash Chandra Nayak), Village : Surjyadi, Thana : Siyaljori, Distt.: Bokaro, Jharkhand (2.52 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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16. Chakuliya Stone Mine of M/s Kauleshwari Enterprises (Partner : (i) Shri Deepak Kumar (ii) Shri Jaiprakash Singh (iii) Shri Nitish Kumar (iv) Shri Rajendra Singh), Village : Chakuliya, Thana : Pindrajora, Distt.: Bokaro, Jharkhand (2.832 Ha).

(Proposal no.: SIA/JH/MIN /492970/2024)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 66,516 CUM. (MAX.) / 1,79,593 TONS (MAX.) TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Chakuliya Stone Mine
2	Lessee:	:	M/s Kauleshwari Enterprises
3	Lessee Address	:	M/s Kauleshwari Enterprises. Partners: 1. Shri Deepak Kumar 2. Shri Jaiprakash Singh 3. Shri Nitish Kumar 4. Shri Rajendra Singh

			R/o the Company: Sonbigha Kothi, Near S.P Awas, College Road, Nagwna, Dist - Chatra.	
4	Lease Area	:	2.832Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 130.39 Lakhs	Recurring Cost: Rs.2.25 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 13.39Lakhs	Recurring Cost: Rs. 5.34 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 4,96,416 cum	Tonnes: 13,40,323 tons
10	Mine Life	:	9 years.	
11	Man power	:	32Person	
12	Water Requirement	:	4.97 KLD (Drinking: 0.48 KLD, Dust Suppression: 4.06 KLD Plantation: 4.57KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	60 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Izri River – 2.0 km – S-W direction.	
17	Nearest Habitation	:	Chakalia Village – 0.6 Km in N-E Direction	
18	Nearest Rail Station	:	Radhagaon Railway Station at areal distance of 8.21 km NW direction.	
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at areal distance of 90.29 km SW direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Medninagar. letter no.- 293 Dated: 06.02.2024	
21	Road & Highways	:	Radhagaon Railway Station at areal distance of 8.21 km NW direction.	

CO-ORDINATES

Point	Latitude	Longitude
1	23° 34' 24.77631943" N	086° 09' 56.16345042" E
2	23° 34' 24.66139790" N	086° 09' 56.95270957" E
3	23° 34' 24.50415165" N	086° 09' 58.04694221" E
4	23° 34' 24.34733947" N	086° 09' 59.12389763" E

5	23° 34' 24.10392184" N	086° 09' 59.23387789" E
6	23° 34' 23.87875641" N	086° 09' 59.34346633" E
7	23° 34' 23.68956928" N	086° 09' 59.69691603" E
8	23° 34' 23.08054016" N	086° 10' 00.10125816" E
9	23° 34' 22.45336718" N	086° 10' 00.42360387" E
10	23° 34' 22.10349718" N	086° 10' 00.69505067" E
11	23° 34' 21.87284196" N	086° 10' 00.92691087" E
12	23° 34' 21.67392453" N	086° 10' 01.29135324" E
13	23° 34' 21.41759570" N	086° 10' 01.13839584" E
14	23° 34' 20.76692342" N	086° 10' 00.80695174" E
15	23° 34' 20.23452664" N	086° 10' 00.57804684" E
16	23° 34' 19.72608129" N	086° 10' 00.40717191" E
17	23° 34' 19.78625437" N	086° 10' 00.20499633" E
18	23° 34' 18.96016875" N	086° 10' 00.00176291" E
19	23° 34' 18.71671329" N	086° 10' 00.00636977" E
20	23° 34' 18.67007866" N	086° 09' 59.51159417" E
21	23° 34' 18.64625677" N	086° 09' 59.17381313" E
22	23° 34' 18.85358824" N	086° 09' 59.15402008" E
23	23° 34' 18.70327294" N	086° 09' 58.38774617" E
24	23° 34' 18.54518265" N	086° 09' 58.30009122" E
25	23° 34' 18.60612157" N	086° 09' 57.76539313" E
26	23° 34' 18.21102236" N	086° 09' 57.43927013" E
27	23° 34' 18.07099245" N	086° 09' 57.01151044" E
28	23° 34' 17.93096250" N	086° 09' 56.58375076" E
29	23° 34' 17.38153283" N	086° 09' 56.39995812" E
30	23° 34' 17.50589344" N	086° 09' 55.86013080" E
31	23° 34' 17.58968354" N	086° 09' 55.49641280" E

32	23° 34' 17.64814884" N	086° 09' 54.65587204" E
33	23° 34' 18.16546554" N	086° 09' 53.99840559" E
34	23° 34' 18.83058741" N	086° 09' 54.36869605" E
35	23° 34' 19.41370672" N	086° 09' 54.75748816" E
36	23° 34' 20.68723233" N	086° 09' 55.04854088" E
37	23° 34' 21.45651931" N	086° 09' 55.22435482" E
38	23° 34' 22.59952862" N	086° 09' 55.54760111" E
39	23° 34' 23.74253516" N	086° 09' 55.87084740" E

LAND DETAILS

Khata no.	Plot no.
152	455 (P), 599 (P), 602 & 603

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 1025/Khanan, dated 05.07.2024.
2	CO	:	The CO, Chas (Bokaro) vide letter no. 3005, dated 08.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 1181/M, dated 03.08.2024 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. 2948, dated 26.12.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Bokaro Forest Division vide letter no. 293, dated 06.02.2024 certified that the distance of notified forest is 460 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Bokaro District (Sl. no. 07, Page no. 84).
7	Gram Sabha	:	BDO, Chas (Bokaro) vide letter no. 795, dated 03.07.2024

			informed that Gram Sabha conducted on 28.02.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1124/M, dated 25.07.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay 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. .832 Ha	Life of Mine – 9year
3	Waste Generation	:	15595cum	
4	Stripping Ratio	:	14:05	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	220m–217m AMSL	
8	Ground Level Elevation	:	217 AMSL	
9	Ultimate Working Depth	:	43 m AMSL	
10	Water Table	:	Post Monsoon –165m AMSL Pre Monsoon – 160m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	62.37 kg Nitro mix explosives/day	
13	Diesel/Fuel requirement	:	HSD – 343 liters / day (103 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	66516	2.7	179593	222	599	8004	27
2nd	56640	2.7	152928	189	510	14274	48
3rd	55932	2.7	151016	186	503	0	0
4th	47064	2.7	127073	157	424	0	0
5th	46212	2.7	124772	154	416	0	0

Total	272364	2.7	735383	222 Max.	599 Max.	22278	48 Max.

Land Use pattern

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (acres)	Proposed Land use for current plan period (acres)	Land to be used in remaining period of the life of the mine. (acres)	Land used at the conceptual stage ie end of mine life in (acres)	Area to be converted in the conceptual period.
1	Mining Activities	0.00	5.14	0.00	5.14	Water body
2	Offices/ Store etc.	0.00	0.01	0.00	0.01	Plantation
3	Dumping	0.00	0.30	0.00	0.30	Plantation -
4	Mining Road	0.00	0.13	0.00	0.13	Water body
5	Garland drain	0.00	0.08	0.00	0.08	-
6	Settling Tank	0.00	0.03		0.03	-
7	Safety Zone	0.00	1.21	0.00	1.21	Green Belt
8	Stone Stock yards	0.00	0.00	0.00	0.00	
9	Unutilized	7.00	0.10	0.00	0.10	Green Belt
Total		**7.00**	**7.00**	**7.00**	**7.00**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.59 Ha	944
2	Along Approach Road		868m	578
TOTAL				**1522**

- 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.

- **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. 800 per Tanker)	--	**3,00,000**
2	Plantation 448 X 800 = Rs 3,58,400 (Gabion Plantation along approach road) 1122 X 400 = 4,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	**13,39,000**	**1,33,900**
3	Fencing	**1,00000**	-
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	--	**1,00,000**
Total		**13,39,000**	**5,33,900**

Environment Monitoring Programmed

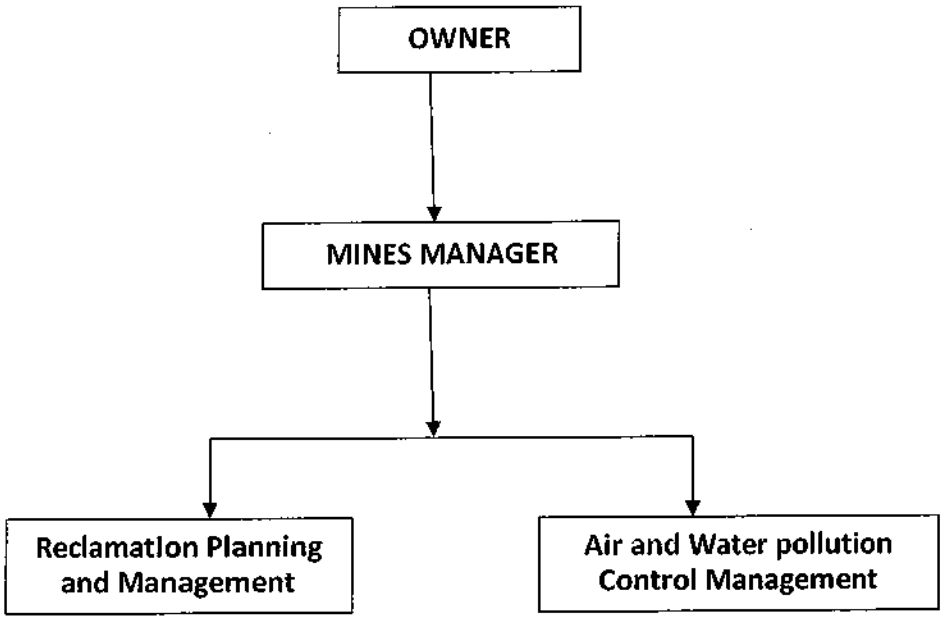
SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly

4.	Soil	3 Station	6 Monthly

Solid Waste Management

8161cum. 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 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 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 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 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, thereby 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x	L5 (Very	L4 (Remote)	L3	L2	L1

Consequence)	Unlikely)		(Occasional)	(Probable)	(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 Chakuliya Stone Mine of M/s Kauleshwari Enterprises (Partner : (i) Shri Deepak Kumar (ii) Shri Jaiprakash Singh (iii) Shri Nitish Kumar (iv) Shri Rajendra Singh), Village : Chakuliya, Thana : Pindrajora, Distt.: Bokaro, Jharkhand (2.832 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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17. Karma Kalan Stone Mine of Partners : (i) Shri Anil Kumar (ii) Shri Pankaj Kumar (iii) Shri Sudhir Singh, Village : Karma Kalan, Thana : Chhatarpur, Distt. : Palamau, Jharkhand (1.22 Ha).

(Proposal no.: SIA/JH/MIN/ 518806 /2025)

The PA was asked to obtain revised Circle Officer certificate with regard to Nature of Land i.e. Jungle-Jhari.

Hence the proposal will be taken up after submission of the above.

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18. Bakoriya Stone Mine of M/s Ekta Minerals (Partners : (i) Shri Jai Kishan Kumar (ii) Shri Nishant Kumar Agarwal (iii) Shri Arvind Kumar Singh), Village : Bakoriya, Thana : Satbarwa, Distt. : Palamau, Jharkhand (2.039 Ha).

(Proposal no.: SIA/JH/MIN/ 518807 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 94997 CUM. (MAX.) / 265992 TONS (MAX.) TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bakoriya Stone Mine	
2	Lessee:	:	M/s Kauleshwari Enterprises	
3	Lessee Address	:	Partners 1)Shri Jai Kishan Kumar S/o Shri Ashok Prasad R/o Ranchi, Thana- Manika, District- Latehar, 2)Shri Nishant Kumar Agarwal S/o Shri Anup Kumar Agarwal R/o Ranchi, Redma, Thana- Daltonganj, District-Palamu. 3) Shri Arvind Kumar Singh S/o- Late Ramta Prasad Singh, Aabadganj, Daltonganj, District-Palamu.	
4	Lease Area	:	2.039Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. Rs.132.39 Lakhs	Recurring Cost: Rs.60.74 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 5.95Lakhs	Recurring Cost: Rs. 5.83 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 425984 cum	Tonnes: 1192755 tons
10	Mine Life	:	5 years.	
11	Man power	:	42Person	
12	Water	:	6.3 KLD (Drinking: 0.630 KLD, Dust Suppression: 2.28 KLD	

	Requirement		Plantation: 3.366 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	20 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	North Koyal River – 12.5 km – E direction (aerial distance)
17	Nearest Habitation	:	Bakoriya Village –0.600 Km
18	Nearest Rail Station	:	Rajhura Railway Station is at areal distance of 15.9 km in SWdirection. (aerial distance).
19	Nearest Air Port	:	Ranchi Airport - 120 km SE direction. (aerial distance)
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Medninagar. letter no.- 2263 Dated: 22..12.2022
21	Road & Highways	:	The distance of Approach Road is 57m, after that this road connects to SH-39 at 1 Km Satbarwa – Palamu.

CO-ORDINATES

POINT NAME	LONGITUDE	LATITUDE
1	84°19'36.901" E	23°53'45.149" N
2	84°19'35.567" E	23°53'45.771" N
3	84°19'35.788" E	23°53'46.185" N
4	84°19'35.062" E	23°53'46.443" N
5	84°19'33.840" E	23°53'46.720" N
6	84°19'32.955" E	23°53'48.258" N
7	84°19'33.404" E	23°53'49.763" N
8	84°19'34.308" E	23°53'50.103" N
9	84°19'34.483" E	23°53'50.586" N
10	84°19'35.963"E	23°53'51.233"N
11	84° 19' 36.258" E	23° 53' 48.377" N
12	84° 19' 38.581" E	23° 53' 47.801" N
13	84° 19' 39.390" E	23° 53' 51.559" N
14	84° 19' 39.986" E	23° 53' 51.315" N
15	84° 19' 40.952" E	23° 53' 50.986" N
16	84° 19' 39.705" E	23° 53' 47.786" N

17	84° 19' 38.254" E	23° 53' 46.503" N

LAND DETAILS

Khata no.	Plot no.
198 & 201	4323 (P), 4324 (P) & 4325 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 265/M, dated 20.02.2024.
2	CO	:	The CO, Satbarwa (Palamau) vide letter no. 440, dated 13.09.2023 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 River and Educational Institute within 500 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Palamau, Medininagar vide memo no. 2959/M, dated 24.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no. 1150, dated 24.11.2020 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Division Forest Officer, Latehar Forest Division vide letter no. 2263, dated 22.12.2022 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 Palamau District (Sl. no. 16, Page no. 105).
7	Gram Sabha	:	BDO, Satbarwa (Palamau) vide letter no. 1121, dated 30.10.2023 informed that Gram Sabha conducted on 22.09.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology District Geological Officer, Palamau vide Memo No. 11, dated 16.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and

			affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OpenMechanized Method	
2	Quarry Area	:	2.039 Ha	Life of Mine – 5year
3	Waste Generation	:	26181cum	
4	Stripping Ratio	:	28:25	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	349 m–354m AMSL	
8	Ground Level Elevation	:	349 AMSL	
9	Ultimate Working Depth	:	38 m AMSL	
10	Water Table	:	Post Monsoon –312m AMSL Pre Monsoon – 307m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	85.12kg Nitro mix explosives/day	
13	Diesel/Fuel requirement	:	HSD – 454 liters / day (136KL /year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION							
Year	**Volume of Stone (cum)**	**T.F**	**tonnes**	**Tonnes**	**Tonnes**	**Cum**	**Production per day cum (O.B.)**
1st	77420	2.8	216776	258	723	23373	78
2nd	85343	2.8	238960	284	797	0	0
3rd	79247	2.8	221892	264	740	0	0
4th	77831	2.8	217927	259	726	0	0
5th	94997	2.8	265992	317	887	2808	0
Total	**414838**		**1161546**	**317(max)**	**887(Max)**	**26181**	**87**

Land Use pattern

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (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 Activities	0.000	1.376	Water body
2	Offices/ Store etc.	0.000	0.000]	Plantation
3	Dumping	0.000	0.100	Plantation
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.042	-
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.000	Green Belt
8	Safety Zone	0.000	0.621	Plantation
9	Stone Stock yards	0.000	0.000	
10.	Unutilized	0.000	0.000	
11.	Crusher	0.000	0.000	
Total		**2.039**	**2.039**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.601 Ha	962
2	Along Approach Road		57m	76
TOTAL				**1038**

- 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.

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. 800 per Tanker)	--	**3,30,000**

2	Plantation 448 X 800 = Rs 3,58,400 (Gabion Plantation along approach road) 1122 X 400 = 4,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	4,94,400	49440
3	Fencing	1,00000	-
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		**5,94,400**	**5,82,660**

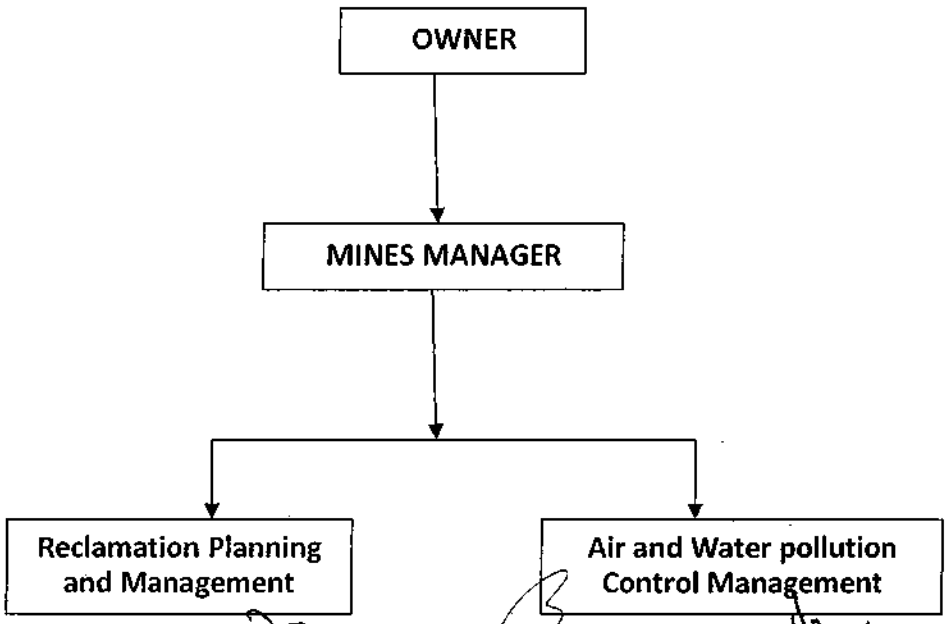
Environment Monitoring Programmed

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

26181 cum 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 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

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

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C5	Insignificant	May result in no, or less minor, illness, injuryor 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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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 Bakoriya Stone Mine of M/s Ekta Minerals (Partners : (i) Shri Jai Kishan Kumar (ii) Shri Nishant Kumar Agarwal (iii) Shri Arvind Kumar Singh), Village : Bakoriya, Thana : Satbarwa, Distt. : Palamau, Jharkhand (2.039 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. The OB shall be stacked within the Mining Lease (ML) area and not outside the ML area.

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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19. Chorhat Stone Mine of Shri Akhilesh Kumar, Village : Chorhat, Thana : Chainpur, Distt. : Palamau, Jharkhand (2.165 Ha).

(Proposal no.: SIA/JH/MIN/ 518785 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 42,948 Cum (MAX.) / 1,20,254 Tons (MAX.) TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chorhat Stone Mine	
2	Lessee:	:	Mr. Akhilesh Kumar	
3	Lessee Address	:	Mr. Akhilesh Kumar S/o Mr. Lal Bihari Prasad Vill+ PO+PS - Chainpur, Dist- Palamu Jharkhand	
4	Lease Area	:	2.165 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. Rs.131.285Lakhs	Recurring Cost: Rs.17.34 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 15.988 Lakhs	Recurring Cost: Rs. 5.881 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 1,89,479cum	Tonnes: 5,30,541 tons
10	Mine Life	:	5 years.	
11	Man power	:	22Person	
12	Water Requirement	:	11.792 KLD (Drinking: 0.330KLD, Dust Suppression: 2.90 KLD Plantation: 8.562KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	North Koel River – 5.75 km in the SE direction	
17	Nearest Habitation	:	Chainpue– 12 km in the N direction.	

18	Nearest Rail Station	:	Mangra Railway Station at aerial distance of 9.25 km at ESE direction.
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 147 km at SE direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 22 Dated- 17/01/25
21	Road & Highways	:	Chainpur-Barwadih Road is at aerial distance of 7.85 km E direction.

CO-ORDINATES

Point Name	Latitude	Longitude
1.	23°53' 57.6385"N	84°1' 35.1065"E
2.	23°53' 55.9142"N	84°1' 37.2105"E
3.	23°53' 55.0965"N	84°1' 37.778"E
4.	23°53' 54.5822"N	84°1' 37.2905"E
5.	23°53' 54.7019"N	84°1' 37.045"E
6.	23°53' 54.0249"N	84°1' 36.7322"E
7.	23°53' 54.3088"N	84°1' 36.1215"E
8.	23°53' 54.6744"N	84°1' 35.527"E
9.	23°53' 53.3606"N	84°1' 35.1231"E
10.	23°53' 53.2742"N	84°1' 36.3141"E
11.	23°53' 53.9153"N	84°1' 36.7217"E
12.	23°53' 54.1398"N	84°1' 36.978"E
13.	23°53' 53.9983"N	84°1' 37.3865"E
14.	23°53' 54.6257"N	84°1' 37.7937"E

15.	23°53' 54.4477"N	84°1' 38.7179"E
16.	23°53' 53.7786"N	84°1' 39.8858"E
17.	23°53' 51.82"N	84°1' 38.9155"E
18.	23°53' 52.0789"N	84°1'38.6082"E
19.	23°53' 52.4813"N	84°1'38.6028"E
20.	23°53' 52.6117"N	84°1' 37.9062"E
21.	23°53' 50.5539"N	84°1' 36.7746"E
22.	23°53' 51.8621 "N	84°1' 34.59"E
23.	23°53' 53.224"N	84°1' 34.9128"E
24.	23°53' 53.0058"N	84°1' 33.7758"E
25.	23°53' 53.2592"N	84°1' 31.5588"E
26.	23°53' 54.7105"N	84°1' 31.4496"E
27.	23°53' 54.8581"N	84°1' 31.3187"E
28.	23°53' 55.1523"N	84°1' 31.4628"E
29.	23°53' 55.1632"N	84°1' 31.9265"E
30.	23°53'55.679"N	84°1' 32.1415"E
31.	23°53' 55.0222"N	84°1' 34.3915"E

LAND DETAILS

Khata no.	Plot no.
05, 12 & 57	50 (P), 54 & 62

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 2102/M, dated 09.10.2024.
2	CO	:	The CO, Chainpur, Palamau vide letter no. 85, dated 24.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Palamau, Medininagar vide memo no. 94/M, dated 15.01.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 22, dated 17.01.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Division Forest Officer, Medininagar Forest Division vide letter no. 2010, dated 08.07.2024 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 Palamau District (Sl. no. 25, Page no. 107).
7	Gram Sabha	:	BDO, Ramgarh, Palamau vide letter no. 44 MU., dated 08.02.2023 informed that Gram Sabha conducted on 01.02.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology District Geological Officer, Palamau vide Letter No. 04, dated 15.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Open Mechanized Method	
2	Quarry Area	:	2.165 Ha	Life of Mine – 5year
3	Waste Generation	:	25712 cum	
4	Stripping Ratio	:	19:10	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	

7	Elevation of Mine	:	86m–49m AMSL
8	Ground Level Elevation	:	49AMSL
9	Ultimate Working Depth	:	37 m AMSL
10	Water Table	:	Post Monsoon - 312m AMSL Pre Monsoon – 307m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	12.12 kg Nitro mix explosives/day
13	Diesel/Fuel requirement	:	HSD – 315.21 liters / day ((94.563 KL /year)

Production details :

	Cum recoverable 95%	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	34803	2.8	97448	116	325	12879	43
2nd	42948	2.8	120254	143	401	0	0
3rd	42427	2.8	118796	141	396	8880	30
4th	41317	2.8	115688	138	386	3953	13
5th	27984	2.8	78355	93	261	0	0
Total	189479	2.8	530541	143(MAX)	401(MAX)	25712	30

Land use pattern

1	Mining Activities	0.000	1.428	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.063	Plantation -
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.052	-
6	Settling Tank	0.000	0.011	-
7	Green belt	0.000	0.000	Green Belt
8	Safety Zone	0.000	0.674	Plantation
9	Stone Stock yards	0.000	0.000	
10	Unutilized	2.165	0.000	
11	Crusher (Mobile Crusher)	0.000	0.000	
Total		2.165	2.165	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		1.304 Ha	2086
2	Along Approach Road		575m	768
TOTAL				**2854**

- 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.

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. 800 per Tanker)	--	**2,40,000**
2	Plantation 448 X 800 = Rs 3,58,400 (Gabion Plantation along approach road) 1122 X 400 = 4,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	**14,48,800**	**1,44,880**
3	Fencing	**1,50,000**	-
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	**15,98,800**	**5,88,100**

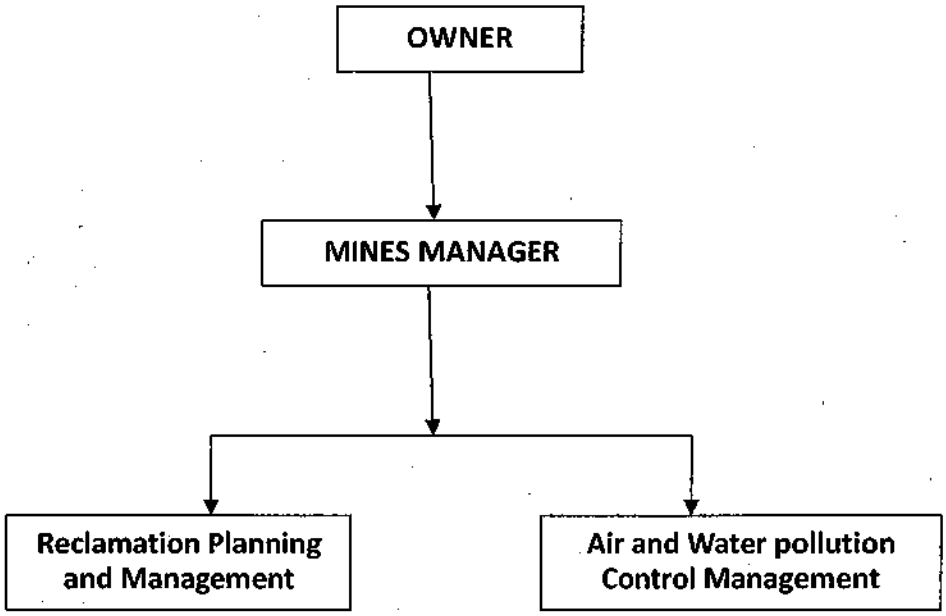
Environment Monitoring Programmed

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

25712 cum 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 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 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 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 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, thereby 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, injuryor 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**
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Hazard identification & Risk Analysis in Stone mining operation

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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 Chorhat Stone Mine of Shri Akhilesh Kumar, Village : Chorhat, Thana : Chainpur, Distt. : Palamau, Jharkhand (2.165 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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20. Basariya Khurd Stone Mine of Shri Shashikant Gupta, Village : Basariya Khurd, Thana : Chainpur, Distt. : Palamau, Jharkhand (2.776 Ha).

(Proposal no.: SIA/JH/MIN/ 518773 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity:74821 Cum. / annum or 209499 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Basariya Khurd Stone Mine
2	Lessee:	:	Project Proponent: Om Enterprises Proprietor: Shri Shashikant Gupta

3	Lessee Address	:	R/o Gram- Namdhari Gurudwara, Ward No. 22, Sai Chowk, Nawatoli, Daltongunj Dist- Palamu, Jharkhand	
4	Lease Area	:	2.776 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs.101.59 Lakhs	Recurring Cost – 15.22 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 10.008 LakhsLakhs	Recurring Cost: Rs.5.93 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 348694 Cum	Tonnes: 976343 Tons
10	Mine Life	:	5 years.	
11	Man power	:	24Person	
12	Water Requirement	:	7.92 KLD (Drinking: 0.36 KLD, Dust Suppression: 0.4 KLD, Plantation: 5.96 KLD	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	North Koel River – 0.15 km in the NE direction	
17	Nearest Habitation	:	Palamu-17 km	
18	Nearest Rail Station	:	Daltonganj Railway Station at aerial distance of 6.5 km at NW direction.	
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 144.52 km at SE direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 1022 Dated- 14 /12/24	
21	Road & Highways	:	The distance of Approach Road is 0.4 km, after that this road connects to village road. The village road continues for 0.700 km and after this the road connects to MDR Kechki Sangam Road	

CO-ORDINATES

Point Name	Latitude	Longitude
1	23° 58' 26.39821993" N	084° 05' 48.64724895" E
2	23° 58' 25.92075715" N	084° 05' 48.43454573" E
3	23° 58' 25.93129744" N	084° 05' 48.29996229" E
4	23° 58' 25.45345284" N	084° 05' 48.14999502" E
5	23° 58' 25.35858714" N	084° 05' 48.27689140" E
6	23° 58' 25.23335102" N	084° 05' 48.78623677" E
7	23° 58' 25.36598708" N	084° 05' 48.98379874" E

8	23° 58' 25.66999542" N	084° 05' 49.11345576" E
9	23° 58' 25.68870450" N	084° 05' 49.45523870" E
10	23° 58' 25.76066251" N	084° 05' 49.67101872" E
11	23° 58' 26.11181744" N	084° 05' 49.92932473" E
12	23° 58' 26.22695015" N	084° 05' 50.26480753" E
13	23° 58' 26.57810472" N	084° 05' 50.21755643" E
14	23° 58' 26.67884574" N	084° 05' 50.06418724" E
15	23° 58' 27.02514282" N	084° 05' 50.29059875" E
16	23° 58' 27.41641324" N	084° 05' 50.48993932" E
17	23° 58' 27.69749811" N	084° 05' 50.77295372" E
18	23° 58' 27.69300075" N	084° 05' 51.04120214" E
19	23° 58' 27.83241878" N	084° 05' 51.16179088" E
20	23° 58' 27.77395316" N	084° 05' 51.57769899" E
21	23° 58' 28.07302722" N	084° 05' 51.86071338" E
22	23° 58' 27.74472035" N	084° 05' 52.31845840" E
23	23° 58' 27.19829127" N	084° 05' 53.04445184" E
24	23° 58' 27.00040732" N	084° 05' 53.00507592" E
25	23° 58' 27.48837098" N	084° 05' 53.67446648" E
26	23° 58' 28.04379443" N	084° 05' 54.53089264" E
27	23° 58' 27.63678379" N	084° 05' 55.19782221" E
28	23° 58' 27.23131876" N	084° 05' 55.44069163" E
29	23° 58' 26.73590607" N	084° 05' 55.27536985" E
30	23° 58' 25.95926656" N	084° 05' 54.64163741" E
31	23° 58' 25.63995294" N	084° 05' 54.91480782" E
32	23° 58' 25.53651327" N	084° 05' 54.90742484" E
33	23° 58' 25.20595591" N	084° 05' 54.63425442" E
34	23° 58' 25.09127269" N	084° 05' 54.90496384" E
35	23° 58' 25.15423603" N	084° 05' 55.14368033" E
36	23° 58' 25.21495067" N	084° 05' 55.15352431" E
37	23° 58' 25.40159193" N	084° 05' 55.52021252" E
38	23° 58' 25.60172524" N	084° 05' 55.66541121" E
39	23° 58' 25.45331178" N	084° 05' 56.16253214" E
40	23° 58' 24.89788524" N	084° 05' 55.61619131" E
41	23° 58' 24.51335877" N	084° 05' 55.70970911" E
42	23° 58' 24.20978503" N	084° 05' 55.50790755" E
43	23° 58' 24.57857089" N	084° 05' 55.10430441" E
44	23° 58' 24.04450590" N	084° 05' 54.66394017" E
45	23° 58' 24.13234558" N	084° 05' 54.46398698" E
46	23° 58' 24.18504938" N	084° 05' 54.46782965" E
47	23° 58' 24.38883734" N	084° 05' 54.29479096" E
48	23° 58' 24.54694863" N	084° 05' 54.04869149" E
49	23° 58' 24.35721508" N	084° 05' 53.72568594" E
50	23° 58' 24.13234558" N	084° 05' 53.78336550" E
51	23° 58' 24.00585644" N	084° 05' 53.47189586" E
52	23° 58' 23.90396238" N	084° 05' 53.24886821" E
53	23° 58' 23.98477491" N	084° 05' 53.04506708" E
54	23° 58' 24.38883734" N	084° 05' 53.27963064" E

55	23° 58' 24.51181280" N	084° 05' 53.10659195" E
56	23° 58' 24.42397319" N	084° 05' 52.82588474" E
57	23° 58' 24.22369883" N	084° 05' 52.56055875" E
58	23° 58' 24.35018791" N	084° 05' 52.27600624" E
59	23° 58' 24.06910101" N	084° 05' 52.20294546" E
60	23° 58' 23.90044880" N	084° 05' 51.94915538" E
61	23° 58' 23.72125575" N	084° 05' 51.50694539" E
62	23° 58' 23.64536220" N	084° 05' 51.19870580" E
63	23° 58' 23.86123715" N	084° 05' 50.99444324" E
64	23° 58' 24.05912243" N	084° 05' 50.73111680" E
65	23° 58' 24.06137112" N	084° 05' 50.40380451" E
66	23° 58' 24.14907025" N	084° 05' 50.22415189" E
67	23° 58' 24.25475893" N	084° 05' 50.11340713" E
68	23° 58' 24.38743191" N	084° 05' 50.01250635" E
69	23° 58' 24.54708918" N	084° 05' 50.24383985" E
70	23° 58' 24.61230129" N	084° 05' 50.18477598" E
71	23° 58' 24.74497417" N	084° 05' 50.15524404" E
72	23° 58' 24.67976208" N	084° 05' 49.94113750" E
73	23° 58' 24.52909963" N	084° 05' 49.73195295" E
74	23° 58' 24.35370149" N	084° 05' 49.51784641" E
75	23° 58' 24.51335877" N	084° 05' 49.20776108" E
76	23° 58' 24.71124378" N	084° 05' 48.95427862" E
77	23° 58' 24.98558421" N	084° 05' 48.80169695" E
78	23° 58' 24.96984337" N	084° 05' 48.76478203" E
79	23° 58' 25.02156327" N	084° 05' 48.65157627" E
80	23° 58' 24.96984337" N	084° 05' 48.44977470" E
81	23° 58' 24.96309729" N	084° 05' 48.36856188" E
82	23° 58' 25.16098210" N	084° 05' 48.08308649" E
83	23° 58' 24.72614137" N	084° 05' 47.71932071" E
84	23° 58' 24.91938835" N	084° 05' 47.30787316" E
85	23° 58' 25.04939082" N	084° 05' 47.01947534" E
86	23° 58' 25.46511429" N	084° 05' 46.18274340" E
87	23° 58' 25.88083738" N	084° 05' 45.34601146" E
88	23° 58' 26.27211499" N	084° 05' 44.55848062" E
89	23° 58' 26.82964803" N	084° 05' 45.05952377" E
90	23° 58' 27.38718040" N	084° 05' 45.56056691" E
91	23° 58' 27.82342407" N	084° 05' 45.98385800" E
92	23° 58' 28.25966733" N	084° 05' 46.40714909" E
93	23° 58' 28.70940221" N	084° 05' 46.67785851" E
94	23° 58' 29.26999514" N	084° 05' 46.90122396" E
95	23° 58' 29.83058739" N	084° 05' 47.12458942" E
96	23° 58' 29.52547065" N	084° 05' 48.16347972" E
97	23° 58' 29.22035371" N	084° 05' 49.20237001" E
98	23° 58' 28.97555022" N	084° 05' 50.03589902" E
99	23° 58' 28.37659844" N	084° 05' 49.77625086" E
100	23° 58' 28.32712759" N	084° 05' 49.18561212" E
101	23° 58' 27.78969390" N	084° 05' 48.81400192" E

102	23° 58' 27.56932343" N	084° 05' 48.61958334" E
103	23° 58' 27.00940205" N	084° 05' 48.17168230" E
104	23° 58' 27.47263023" N	084° 05' 47.35955405" E
105	23° 58' 27.08180959" N	084° 05' 47.09740889" E
106	23° 58' 26.79973493" N	084° 05' 47.18246087" E
107	23° 58' 26.62703608" N	084° 05' 47.60142061" E
108	23° 58' 26.36982198" N	084° 05' 48.29128664" E
109	23° 58' 26.44714137" N	084° 05' 48.45194038" E
110	23° 58' 26.39821993" N	084° 05' 48.64724895" E
111	23° 58' 24.80794191" N	084° 05' 52.13751659" E
112	23° 58' 24.66402270" N	084° 05' 52.20840238" E
113	23° 58' 24.79498625" N	084° 05' 52.58168579" E
114	23° 58' 24.94177945" N	084° 05' 52.52026043" E
115	23° 58' 24.80794191" N	084° 05' 52.13751659" E

LAND DETAILS

Khata no.	Plot no.
16 & 20	185 (P), 222 (P), 225 (P), 211 & 212 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 2122/M, dated 14.10.2024.
2	CO	:	The CO, Chainpur, Palamau vide letter no. 740, dated 13.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Palamau, Medininagar vide memo no. 2604/M, dated 12.11.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 1022, dated 14.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Division Forest Officer, Medininagar Forest Division vide letter no. 2029, dated 09.07.2024 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 Palamau District (Sl.

			no.31, Page no. 108).
7	Gram Sabha	:	BDO, Chainpur, Palamau vide letter no. 1326, dated 28.09.2024 informed that Gram Sabha conducted on 27.09.2024.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology District Geological Officer, Palamau vide Memo No. 06, dated 16.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OpencastMechanized Method	
2	Quarry Area	:	2.776 Ha.	Life of Mine – 5year
3	Waste Generation	:	35667 cum	
4	Stripping Ratio	:	08:05	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	236 m–209 m AMSL	
8	Ground Level Elevation	:	221 AMSL	
9	Ultimate Working Depth	:	20 m AMSL	
10	Water Table	:	Post Monsoon – 197m AMSL Pre Monsoon – 193m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	65.52 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD –302 liters / day (90.6 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum recoverable 95%	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	74821	2.8	209499	249	698	32955	110

2nd	60622	2.8	169742	202	566	22218	74
3rd	70903	2.8	198528	236	662	0	0
4th	68041	2.8	190515	227	635	0	0
5th	74280	2.8	207984	248	693	0	0
Total	**348667**	**2.8**	**976268**	**249(MAX)**	**698(MAX)**	**55173**	**184**

Land Use pattern

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (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 Activities**	0.000	1.613	Water body
2	**Offices/ Store etc.**	0.000	0.000	Plantation
3	**Dumping**	0.000	0.063	Plantation -
4	**Mining Road**	0.000	0.000	Water body
5	**Garland drain**	0.000	0.067	Included in safety zone
6	**Settling Tank**	0.000	0.021	-
7	**Green belt**	0.000	0.003	Green Belt
8	**Safety Zone**	0.000	1.076	Plantation
9	**Stone Stock yards**	0.000	0.000	
10	**Unutilized**	2.776	0.000	
11	**Crusher (Mobile Crusher)**	0.000	0.000	
Total		2.776	2.776	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone/ Dumping/		1.009 Ha	1614

	Offices/ Store etc.			
2	Along Approach Road		400m	266
TOTAL				**1880**

- 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.

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	**Plantation** **266 X 800 = Rs 2,12,800 (Gabion Plantation along approach road)** **1720 X 400 = 6, 88,000 (Plantation within lease area), (also includes Fertilizer, Pesticides, Maintenance)**	9,00,800	90,080
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		**Rs 10,00,800**	**Rs 5,93,300**

Environment Monitoring Programmed

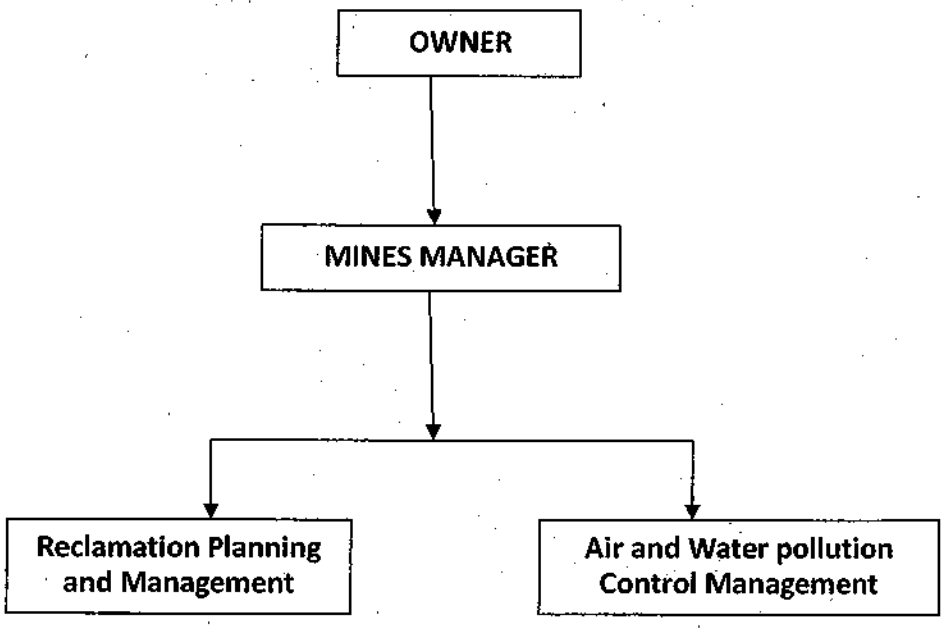
SL. No.	Description	No. Of Monitoring Stations	Duration

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

35667 cum. 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 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 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 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 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, thereby 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, injuryor 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 Didi 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 Basariya Khurd Stone Mine of Shri Shashikant Gupta, Village : Basariya Khurd, Thana : Chainpur, Distt. : Palamau, Jharkhand (2.776 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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21. Chitabar Stone Mine of Mr. Saeed Anwar, Village : Chitabar, Thana : Ramgarh, Distt. : Palamau, Jharkhand (1.91 Ha).

(Proposal no.: SIA/JH/MIN/ 518798 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 66,516 CUM. (MAX.) / 1,79,593 TONS (MAX.) TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chitabar Stone Mine	
2	Lessee:	:	Saeed Anwar S/o Abdul Satar	
3	Lessee Address	:	Prop.-Saeed Anwa S/o Abdul Satar, R/o Vill – Neura, P.O & P.S – Chainpur, Palamu.	
4	Lease Area	:	1.91 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: 122.35 Lakhs	Recurring Cost: Rs. 7.18

				Lakhs
7	EMP Budget	:	Capital Cost: Rs. 6.23 Lakhs	Recurring Cost: Rs. 5.87 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 314920cum	Tonnes: 736338 tons
10	Mine Life	:	10 years.	
11	Man power	:	30Person	
12	Water Requirement	:	4.9 KLD (Drinking: 0.450 KLD, Dust Suppression: 0.80 KLD Plantation: 3.594KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	North Koel River at 12.52 KM East .	
17	Nearest Habitation	:	Chitabar Village –0.600Km	
18	Nearest Rail Station	:	Mangra Railway Station is at areal distance of12.82 km in East direction.	
19	Nearest Air Port	:	Birsa MundaAirport (Ranchi) is at areal distance of150km NW direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer ,sahibganj . letter no.-2011 Dated- 08/07/2024	
21	Road & Highways	:	The distance of Approach Road is 100m, after that this road connects to village road. The village road continues for 18 km and after this the road connects to MDR Garhwa - Daltonganj Road.	

CO-ORDINATES

Pillerno.	Latitude	Longitude
1	23°53'7.9065"N	83°59'28.0273"E
2	23°53'7.0075"N	83°59'29.6171"E
3	23°53'6.3043"N	83°59'29.1546"E
4	23°53'6.4822"N	83°59'28.4683"E
5	23°53'5.3523"N	83°59'27.6405"E
6	23°53'4.7496"N	83°59'27.8333"E
7	23°53'3.0572"N	83°59'26.7624"E
8	23°53'1.9711"N	83°59'28.7822"E

9	23°53'1.2451"N	83°59'28.7718"E
10	23°53'1.1027"N	83°59'28.3967"E
11	23°53'1.1183"N	83°59'27.5675"E
12	23°52'59.5843"N	83°59'26.9233"E
13	23°52'59.9527"N	83°59'25.6595"E
14	23°53'0.7978"N	83°59'23.9406"E
15	23°53'1.4429"N	83°59'23.9712"E
16	23°53'2.6474"N	83°59'24.9464"E
17	23°53'3.8262"N	83°59'25.1703"E
18	23°53'4.3087"N	83°59'24.279"E
19	23°53'4.7613"N	83°59'24.3138"E
20	23°53'5.2567"N	83°59'23.8974"E
21	23°53'6.5754"N	83°59'25.1126"E
22	23°53'7.3521"N	83°59'25.6433"E
23	23°53'6.9848"N	83°59'26.6139"E
24	23°53'6.5163"N	83°59'26.5123"E
25	23°53'6.7089"N	83°59'27.2527"E

LAND DETAILS

Khata no.	Plot no.
01, 16, 32, 24, 16 & 24	469, 466, 286, 287, 480, 284 & 283

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 2123/M, dated 14.10.2024.
2	CO	:	The CO, Chainpur, Palamau vide letter no. 83, dated 24.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.

3	DMO	:	DMO, Palamau, Medininagar vide memo no. 93/M, dated 15.01.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 23, dated 17.01.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Division Forest Officer, Medininagar Forest Division vide letter no. 2011, dated 08.07.2024 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 Palamau District (Sl. no.32, Page no. 108).
7	Gram Sabha	:	BDO, Ramgarh, Palamau vide letter no. 43 MU, dated 08.02.2023 informed that Gram Sabha conducted on 02.02.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology District Geological Officer, Palamau vide Letter No. 03, dated 15.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay 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	:	1.91 Ha	Life of Mine – 10year
3	Waste Generation	:	34448cum	
4	Stripping Ratio	:	21:10	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	342m–338m AMSL	
8	Ground Level Elevation	:	338 AMSL	
9	Ultimate Working Depth	:	38 m AMSL	
10	Water Table	:	Post Monsoon –165m AMSL Pre Monsoon – 160m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	62.37 kg Nitro mix explosives/day	
13	Diesel/Fuel	:	HSD – 343 liters / day (103 KL/year)	

	requirement		

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	35300	2.8	98840	118	329	16700	56
2nd	39372	2.8	110242	131	367	17748	59
3rd	25000	2.8	70000	83	233	0	0
4th	32640	2.8	91392	109	305	0	0
5th	4000	2.8	67200	80	224	0	0
Total	156312	2.8	437674	131 (MAX.)	367 (MAX.)	34448	59 (Max.)

Land Use pattern

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (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 Activities	0.000	0.843	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.200	Plantation
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.041	-
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.00	Green Belt
8	Safety Zone	0.000	0.620	Plantation
9	Stone Stock yards	0.000	0.000	
10	Unutilized	1.910	0.046	
11	Crusher	0.000	0.160	

Total	**1.910**	**1.910**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.620 Ha	992
2	Along Approach Road		100m	132
TOTAL				**1,198**

- 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.

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. 800 per Tanker)	--	**3,30,000**
2	Plantation 448 X 800 = Rs 3,58,400 (Gabion Plantation along approach road) 1122 X 400 = 4,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	**5,32,000**	**53200**
3	Fencing	**90,000**	-
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	--	**2,03,220**

	(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		
Total		**6,22,000**	**5,86,420**

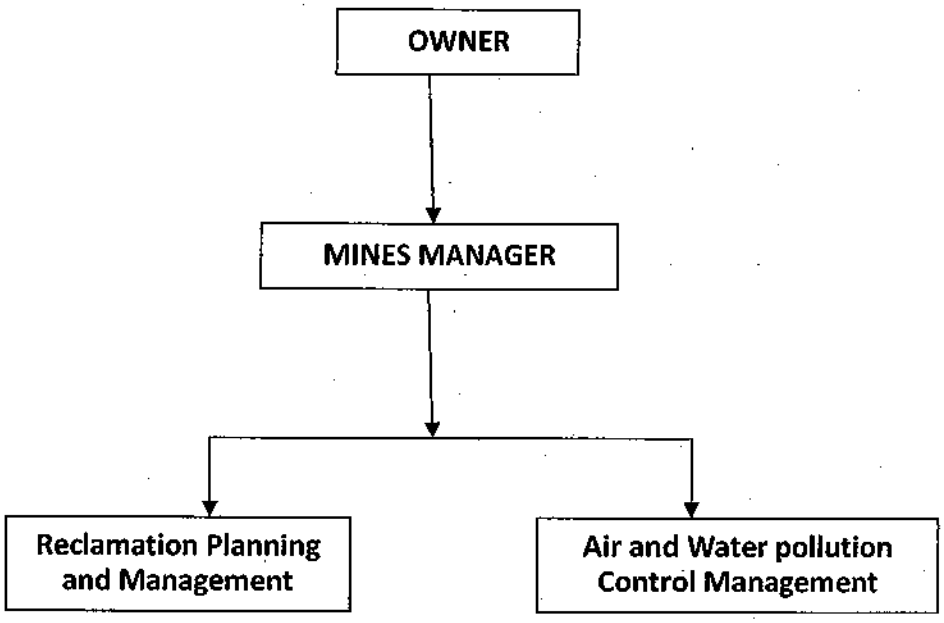
Environment Monitoring Programmed

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

8161cum. 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 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 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 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 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, thereby 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, injuryor 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 Chitabar Stone Mine of Mr. Saeed Anwar, Village : Chitabar, Thana : Ramgarh, Distt. : Palamau, Jharkhand (1.91 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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22. **Nawa Bazar Stone Mine of Shri Eklavaya Kumar, Village : Nawa Bazar, Thana : Nawa Bazar, Distt. : Palamau, Jharkhand (1.416 Ha).**

(Proposal no.: SIA/JH/MIN/ 518904 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 23,775Cum. / annum or 66,570 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Nawa BazarStone Mine	
2	Lessee:	:	Mr. Eklavaya Kumar	
3	Lessee Address	:	Mr. Eklavaya Kumar S/o Mr. Rajballav Prasad Vill- Pathra English, PO- Aurhanpur, Dist- Nawada, Bihar	
4	Lease Area	:	1.416 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 129.085 Lakhs	Recurring Cost: Rs. 4.375 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 9.572 Lakhs	Recurring Cost: Rs. 5.24Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 95,133cum	Tonnes: 2,66,372tons
10	Mine Life	:	5 years.	
11	Man power	:	17Person	
12	Water Requirement	:	6.825 KLD (Drinking: 0.25 KLD, Dust Suppression: 1.86KLD, Plantation: 4.71KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	North Koyal River – 16.40 km – SW direction. (aerial distance)	
17	Nearest Habitation	:	Nawa Bazar – 0.90 km in the E direction.	

18	Nearest Rail Station	:	Rajhura Railway Station is at areal distance of 15.76 km SW direction.
19	Nearest Air Port	:	Gaya International Airport is at areal distance of 112.50 km NE direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Medninagar. letter no.- 2070 Dated: 10.07.2024
21	Road & Highways	:	The mine can be approached by the NH-139 (Aurangabad-Rajhara-Daltonganj Road) at 0.95 km (aerial distance) E direction.

CO-ORDINATES

Point ID	Latitude	Longitude
1	24° 16' 49.96923102" N	084° 05' 26.86503047" E
2	24° 16' 49.55774068" N	084° 05' 27.13952762" E
3	24° 16' 49.14624998" N	084° 05' 27.41402477" E
4	24° 16' 49.01605800" N	084° 05' 27.14030806" E
5	24° 16' 48.89542497" N	084° 05' 26.74636626" E
6	24° 16' 48.71012097" N	084° 05' 26.82081920" E
7	24° 16' 48.87692937" N	084° 05' 27.14934478" E
8	24° 16' 49.02842215" N	084° 05' 27.49096627" E
9	24° 16' 48.84716253" N	084° 05' 27.59856777" E
10	24° 16' 48.51401808" N	084° 05' 27.58414124" E
11	24° 16' 47.99602252" N	084° 05' 27.49933028" E
12	24° 16' 47.79122814" N	084° 05' 27.87875140" E
13	24° 16' 47.80806073" N	084° 05' 27.96492587" E
14	24° 16' 47.78021522" N	084° 05' 28.28460954" E
15	24° 16' 47.79704782" N	084° 05' 28.56159891" E
16	24° 16' 47.89085590" N	084° 05' 28.71758259" E
17	24° 16' 47.74861307" N	084° 05' 28.80668985" E
18	24° 16' 47.42459487" N	084° 05' 28.86522517" E
19	24° 16' 47.04755005" N	084° 05' 29.02164159" E
20	24° 16' 46.49792197" N	084° 05' 29.05441743" E
21	24° 16' 45.99995604" N	084° 05' 29.09288818" E
22	24° 16' 45.50198957" N	084° 05' 29.13135893" E
23	24° 16' 45.44015753" N	084° 05' 28.22227979" E
24	24° 16' 45.37832547" N	084° 05' 27.31320064" E
25	24° 16' 45.28496018" N	084° 05' 26.88183585" E
26	24° 16' 45.15209415" N	084° 05' 26.58244110" E
27	24° 16' 44.96193451" N	084° 05' 26.12317171" E
28	24° 16' 44.81943093" N	084° 05' 25.92531420" E
29	24° 16' 44.67220086" N	084° 05' 25.65940439" E
30	24° 16' 44.50199522" N	084° 05' 25.24838541" E
31	24° 16' 44.50450720" N	084° 05' 25.17338324" E

32	24° 16' 44.40798166" N	084° 05' 24.92756440" E
33	24° 16' 44.27732383" N	084° 05' 24.63042993" E
34	24° 16' 44.19753774" N	084° 05' 24.56522360" E
35	24° 16' 43.98010291" N	084° 05' 24.53646967" E
36	24° 16' 43.92943763" N	084° 05' 24.47588394" E
37	24° 16' 43.90760444" N	084° 05' 24.27166521" E
38	24° 16' 43.66183743" N	084° 05' 23.90167634" E
39	24° 16' 44.39636164" N	084° 05' 23.76741004" E
40	24° 16' 45.10996419" N	084° 05' 23.63696787" E
41	24° 16' 45.82356562" N	084° 05' 23.50652570" E
42	24° 16' 46.23131742" N	084° 05' 24.11396250" E
43	24° 16' 46.44930065" N	084° 05' 24.55384645" E
44	24° 16' 46.86024557" N	084° 05' 25.26502545" E
45	24° 16' 47.08044323" N	084° 05' 25.76304497" E
46	24° 16' 47.08053438" N	084° 05' 25.93191306" E
47	24° 16' 46.50059412" N	084° 05' 25.94373128" E
48	24° 16' 46.67466468" N	084° 05' 26.32637981" E
49	24° 16' 46.84227725" N	084° 05' 26.68078303" E
50	24° 16' 47.52801017" N	084° 05' 26.73543910" E
51	24° 16' 47.65728549" N	084° 05' 26.22730512" E
52	24° 16' 47.88409916" N	084° 05' 25.71002058" E
53	24° 16' 48.26100541" N	084° 05' 25.72514790" E
54	24° 16' 48.39293688" N	084° 05' 25.02440662" E
55	24° 16' 49.09317135" N	084° 05' 24.94167913" E
56	24° 16' 49.36874026" N	084°05' 24.93852761"E
57	24° 16' 49.43969725" N	084° 05' 24.98698228" E
58	24° 16' 49.41010790" N	084° 05' 25.47932906" E
59	24° 16' 49.63637810" N	084° 05' 25.89225503" E
60	24° 16' 49.80335674" N	084° 05' 26.28619549" E
61	24° 16' 49.87599631" N	084° 05' 26.67698681" E

LAND DETAILS

Khata no.	Plot no.
41 & 44	1035 (P) & 1041 (P)

STATUTORY CLEARANCES

J	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 2119/M, dated 14.10.2024.

2	CO	:	The CO, Nawabazar, Palamau vide letter no. 732, dated 08.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Palamau, Medininagar vide memo no. 2321/M, dated 23.10.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 913, dated 29.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Division Forest Officer, Medininagar Forest Division vide letter no. 2070, dated 10.07.2024 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 Palamau District (Sl. no. 27, Page no. 107).
7	Gram Sabha	:	Gram Sabha conducted on 19.12.2022.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology District Geological Officer, Palamau vide Memo No. 09, dated 16.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay 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	:	1.416 Ha	Life of Mine -- 5year
3	Waste Generation	:	8831cum	
4	Stripping Ratio	:	03:10	
5	Working Days	:	300	
6	Benches: size	:	4 m x 4 m	
7	Elevation of Mine	:	305m–301m AMSL	
8	Ground Level Elevation	:	304 AMSL	
9	Ultimate Working Depth	:	25 m AMSL	
10	Water Table	:	Post Monsoon –267m AMSL Pre Monsoon –264 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	

12	Explosive Requirement	:	22.2 kg Nitro mix explosives/day
13	Diesel/Fuel requirement	:	HSD – 245.91 liters / day (73.773 KL/year)

Production Details

SUMMARY OF YEARWISE OF PRODUCTION						
Year	Production in Cum/Year	Production in Cum/Day	O.B. in Cum/Year	Top Soil in Cum/Year	Production in Tons/Year	Production in Tons. /Day
1st	15424	51	4481	-	43187	144
2nd	15638	52	0	-	43786	146
3rd	16596	55	0	-	46469	155
4th	23775	79	4350	-	66570	222
5th	23700	79	0	-	66360	221
Total	**95133**	**79 (max.)**	**8831**	-	**266372**	**222 (max.)**

Land Use pattern

Sl. No.	Pattern of Utilization	Present/ Existing land use pattern in (Ha.)	Proposed Land use for current plan period (Ha.)	Land to be used in remaining period of the life of the 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 Activities	0.000	0.694	0.183	0.877	Water body
2	Offices/ Store etc.	0.000	0.000	0.000	0.000	Plantation
3	Dumping	0.000	0.000	0.000	0.000	Plantation
4	Mining Road	0.000	0.000	0.000	0.000	Water body
5	Garland drain	0.000	0.037	0.000	0.037	Included in mining activity
6	Settling Tank	0.000	0.020	0.000	0.020	-
7	Safety Zone	0.000	0.519	0.000	0.519	Plantation
8	Stone Stock yards	0.000	0.000	0.000	0.000	-
9	Unutilized	**1.416**	0.183	0.001	0.182	Plantation

					(Included in mining activity)	
Total		**1.416**	**1.416**	**0.184**	**1.416**	**-**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone,Dumping Area, Unutilized Area, and Office Area.		0.701 Ha	1,122
2	Along Approach Road		335m	448
TOTAL				**1,570**

- 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.

- **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)	--	2,40,000
2	Plantation 448 X 800 = Rs 3,58,400 (Gabion Plantation along approach road) 1122 X 400 = 4,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	8,07,200	80,720
3	Fencing	1,50,000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) -Rs.27,270	--	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	• 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		
Total		**9,57,200**	**5,23,940**

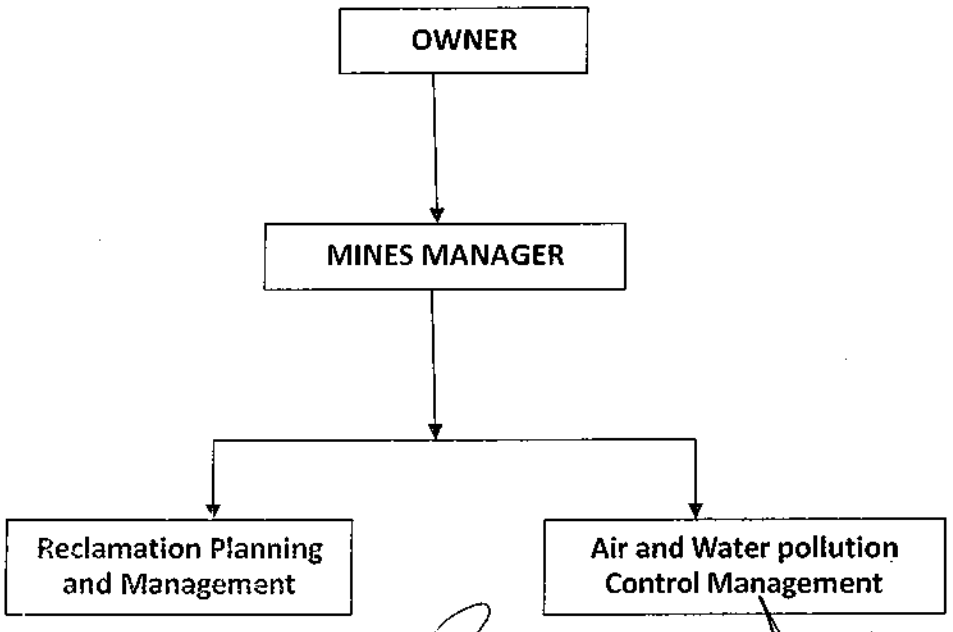
Environment Monitoring Programmed

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

8831 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

<u>Organization Structure</u>



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 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 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 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, thereby 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, injuryor 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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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 Nawa Bazar Stone Mine of Shri Eklavaya Kumar, Village : Nawa Bazar, Thana : Nawa Bazar, Distt. : Palamau, Jharkhand (1.416 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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23. Rehra Stone Mine of Partners : (i) Shri Brihspati Ram (ii) Shri Byas Nandan Prasad (iii) Shri Puna Ram (iv) Smt. Arti Kumari (v) Shri Nilesh Kumar, Village : Rehra, Thana : Chhatarpur, Distt. : Palamau, Jharkhand (0.728 Ha).

(Proposal no.: SIA/JH/MIN/ 518808 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 38,375Cum. / annum or 1,07,450 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Rehra Stone Mine	
2	Lessee:	:	M/s Chaitanya Construction & Equipment Partners 1. Sri Brihspati Ram 2. Sri Byas Nandan Prasad 3. Sri Puna Ram 4. Smt. Arti Kumari 5. Sri Nilesh Kumar	
3	Lessee Address	:	M/s Chaitanya Construction & Equipment Partners 1. Sri Brihspati Ram S/o Sri Hussaini Ram, R/o Vill- Lohrahi, Shildag, Palamu, Jharkhand 2. Sri Byas Nandan Prasad S/o Late Sriram, R/o vill- Lohrahi PO+PS- Chattarpur, Palamu, Jharkhand 3. Sri Puna Ram S/o Late Chandrika Ram, R/o Vill- Lohrahi, PO+PS- Chattarpur, Palamu, Jharkhand 4. Smt. Arti Kumari W/o Pankaj Kumar, R/o Vill+PO- Aunta, PS- Hashidah, Dist.- Patna, Bihar 5. Sri Nilesh Kumar S/o Sri Balmiki Sharma, Vill+PO- Aunta, PS- Hashidah, Dist.- Patna, Bihar.	
4	Lease Area	:	0.728 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 101.59 Lakhs	Recurring Cost: Rs. 16.45 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 3.496 Lakhs	Recurring Cost: Rs. 5.281Lakhs

8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 1,35,480cum	Tonnes: 3,79,344tons
10	Mine Life	:	5 years.	
11	Man power	:	21Person	
12	Water Requirement	:	2.18 KLD (Drinking: 0.315 KLD, Dust Suppression: 0.21KLD, Plantation: 1.66KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	North Koyal River at 31 km West direction.	
17	Nearest Habitation	:	Loharahi Village – 0.972 Km in SW Direction	
18	Nearest Rail Station	:	Japla Railway Station at aerial distance of 25 km in NW direction.	
19	Nearest Air Port	:	Ranchi Airport is at aerial distance of 165 km SE direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Medninagar. letter no.- 2072 Dated: 10.07.2024	
21	Road & Highways	:	The distance of Approach Road is 0.053 km, after that this road connects to village road. The village road continues for 2.24 km and after this the road connects to NH 139 Aurangabad – Rajhara – Daltonganj Road.	

CO-ORDINATES

Point	Latitude	Longitude
1	24° 21' 22.55405384" N	084° 09' 42.41705905" E
2	24° 21' 21.96190945" N	084° 09' 42.20084662" E
3	24° 21' 21.02194469" N	084° 09' 41.94818449" E
4	24° 21' 19.75202149" N	084° 09' 41.74748831" E
5	24° 21' 19.00090549" N	084° 09' 41.70635500" E
6	24° 21' 19.12250159" N	084° 09' 41.54328678" E
7	24° 21' 19.28960205" N	084° 09' 41.49999249" E
8	24° 21' 19.56786803" N	084° 09' 41.45936131" E
9	24° 21' 19.59823466" N	084° 09' 41.23310744" E
10	24° 21' 19.78939939" N	084° 09' 41.09238274" E
11	24° 21' 19.71855505" N	084° 09' 40.83119002" E
12	24° 21' 19.55682801" N	084° 09' 40.79962783" E
13	24° 21' 19.39537644" N	084° 09' 40.98652095" E
14	24° 21' 19.30705947" N	084° 09' 41.04985784" E
15	24° 21' 19.14092345" N	084° 09' 41.15569132" E
16	24° 21' 19.07895245" N	084° 09' 41.15810807" E
17	24° 21' 18.94957426" N	084° 09' 40.92328524" E

18	24° 21' 18.94433620" N	084° 09' 40.82056648" E
19	24° 21' 19.02789968" N	084° 09' 40.78304463" E
20	24° 21' 19.16713632" N	084° 09' 40.84376837" E
21	24° 21' 19.26222735" N	084° 09' 40.79852379" E
22	24° 21' 19.28956201" N	084° 09' 40.60078435" E
23	24° 21' 19.24607355" N	084° 09' 40.37414906" E
24	24° 21' 19.38599513" N	084° 09' 40.31358234" E
25	24° 21' 19.39841179" N	084° 09' 40.24354220" E
26	24° 21' 19.49366906" N	084° 09' 40.13479731" E
27	24° 21' 19.52424368" N	084° 09' 39.84999602" E
28	24° 21' 19.54748631" N	084° 09' 39.65457680" E
29	24° 21' 20.49213389" N	084° 09' 39.59084611" E
30	24° 21' 20.62281019" N	084° 09' 39.85615474" E
31	24° 21' 20.76768652" N	084° 09' 39.89006296" E
32	24° 21' 20.97322448" N	084° 09' 39.96379666" E
33	24° 21' 21.20613002" N	084° 09' 40.03129536" E
34	24° 21' 21.41640764" N	084° 09' 40.10976548" E
35	24° 21' 22.02557218" N	084° 09' 40.29711655" E
36	24° 21' 22.97089057" N	084° 09' 40.54632944" E
37	24° 21' 23.65260266" N	084° 09' 40.63583740" E
38	24° 21' 24.41237951" N	084° 09' 40.66768757" E
39	24° 21' 24.39313457" N	084° 09' 40.75570074" E
40	24° 21' 24.24103245" N	084° 09' 41.10186916" E
41	24° 21' 24.25182416" N	084° 09' 41.55455748" E
42	24° 21' 23.92526064" N	084° 09' 41.61695521" E
43	24° 21' 23.71166150" N	084° 09' 41.86315035" E
44	24° 21' 23.35124799" N	084° 09' 41.89299602" E
45	24° 21' 22.57263995" N	084° 09' 41.86919479" E
46	24° 21' 22.62367650" N	084° 09' 41.99506763" E
47	24° 21' 22.62684028" N	084° 09' 42.17370490" E
48	24° 21' 22.55356498" N	084° 09' 42.27248639" E
49	24° 21' 22.55405384" N	084° 09' 42.41705905" E

LAND DETAILS

Khata no.	Plot no.
15	148 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 2120/M, dated 14.10.2024.
2	CO	:	The CO, Chhatarpur, Palamau vide letter no. 549, dated 27.07.2024 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 River within 110 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Palamau, Medininagar vide memo no. 2322/M, dated 23.10.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 925, dated 05.11.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Division Forest Officer, Medininagar Forest Division vide letter no. 2072, dated 10.07.2024 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 Palamau District (Sl. no. 28, Page no. 107).
7	Gram Sabha	:	BDO, Chhatarpur, Palamau vide letter no. 716, dated 14.08.2024 informed that Gram Sabha conducted on 20.07.2024.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology District Geological Officer, Palamau vide Memo No. 12, dated 16.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay 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	:	0.728 Ha	Life of Mine – 5year
3	Waste Generation	:	13625cum	
4	Stripping Ratio	:	07:20	
5	Working Days	:	300	
6	Benches: size	:	4 m x 4 m	
7	Elevation of Mine	:	270m–267m AMSL	
8	Ground Level Elevation	:	267 AMSL	
9	Ultimate Working Depth	:	21 m AMSL	
10	Water Table	:	Post Monsoon – 243m AMSL Pre Monsoon – 238 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	

12	Explosive Requirement	:	36.96 kg Nitro mix explosives/day
13	Diesel/Fuel requirement	:	HSD – 302 liters / day (90.6 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	38375	2.8	107450	128	358	11375	38
2nd	34875	2.8	97650	116	326	2250	8
3rd	35500	2.8	99400	118	331	0	0
4th	25375	2.8	71050	85	237	0	0
5th	6750	2.8	18900	23	63	0	0
Total	**140875**		**394450**	**128 (Max)**	**358 (Max)**	**13625**	**45**

Land Use pattern

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (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 Activities	0.000	0.423	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.000	Plantation
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.024	Included in safety zone
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.000	Green Belt
8	Safety Zone	0.000	0.305	Plantation
9	Stone Stock yards	0.000	0.000	
10	Unutilized	0.728	0.000	
11	Crusher	0.000	0.000	
Total		**0.728**	**0.728**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.305 Ha	488
2	Along Approach		53m	68

	Road			
TOTAL				**556**

- 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.

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	Plantation 68 X 800 = Rs 54,400 (Gabion Plantation along approach road) 488 X 400 = 1,95,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	2,49,600	24,960
3	Fencing	100,000	-
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		**3,49,600**	**5,28,180**

Environment Monitoring Programmed

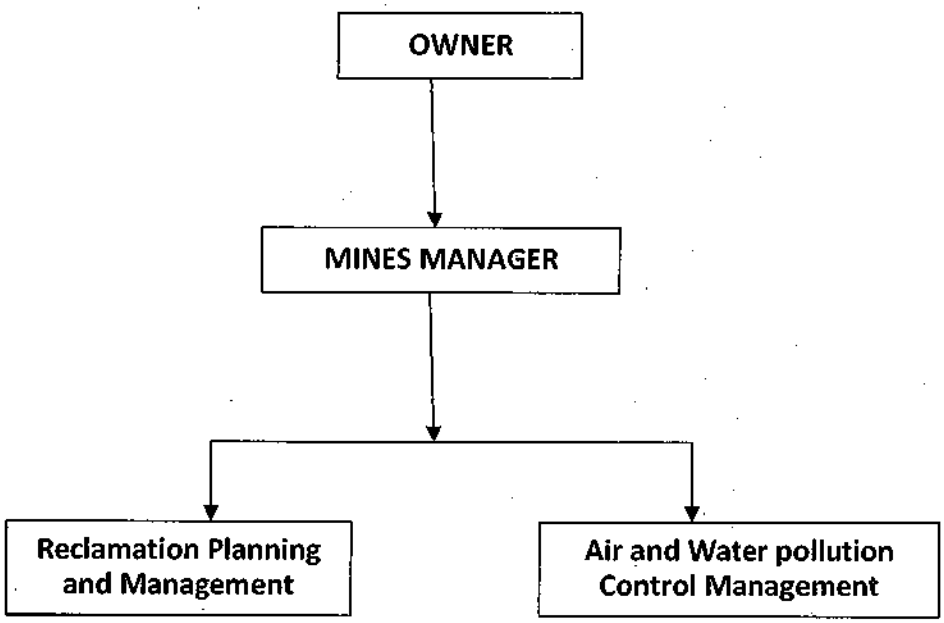
Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly

2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Solid Waste Management

13625cum. 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 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 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 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 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, thereby 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, injuryor 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 Rehra Stone Mine of Partners : (i) Shri Brihspati Ram (ii) Shri Byas Nandan Prasad (iii) Shri Puna Ram (iv) Smt. Arti Kumari (v) Shri Nilesh Kumar, Village : Rehra, Thana : Chhatarpur, Distt. : Palamau, Jharkhand (0.728 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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24. Nawa Stone Mine of Shri Animesh Kumar, Village : Nawa, Thana : Manatu, Distt. : Palamau, Jharkhand (1.07 Ha).

(Proposal no.: SIA/JH/MIN/ 518876 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 22,176Cum. / annum or 62,093 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Nawa Stone Mine	
2	Lessee:	:	Shri Animesh Kumar	
3	Lessee Address	:	Shri Animesh Kumar S/o Shri Ashok Prasad R/o Vill + P.O + P.S. – Manika, Dist - Latehar.	
4	Lease Area	:	1.07 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 74.09 Lakhs	Recurring Cost: Rs. 11.66 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 7.11 Lakhs	Recurring Cost: Rs.

				5.64Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 90,884cum	Tonnes: 2,54,475tons
10	Mine Life	:	5 years.	
11	Man power	:	26Person	
12	Water Requirement	:	4.97 KLD (Drinking: 0.390 KLD, Dust Suppression: 1.280KLD, Plantation: 3.300KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	North Koyal River at 12.52 km East direction.	
17	Nearest Habitation	:	Nawa Village – 0.620 Km in SW Direction	
18	Nearest Rail Station	:	DaltonganjRailway Station at aerial distance of 20 km in SW direction.	
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 140 km SE direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Medninagar. letter no.- 2137 Dated: 06.07.2023	
21	Road & Highways	:	The distance of Approach Road is 0.32 Km, after that this road connects to Daltonganj – Balumath from the village road at a distance of 20 Km South direction.	

CO-ORDINATES

Point ID	Latitude	Longitude
1	24° 14' 53.08476720" N	084° 24' 01.95089760" E
2	24° 14' 52.47727800" N	084° 24' 01.77872400" E
3	24° 14' 52.54370520" N	084° 24' 01.09149840" E
4	24° 14' 52.83728160" N	084° 24' 01.12603320" E
5	24° 14' 52.94796360" N	084° 24' 00.35866800" E
6	24° 14' 52.03601520" N	084° 24' 00.34016400" E
7	24° 14' 52.00249200" N	084° 24' 01.01881080" E
8	24° 14' 52.30598640" N	084° 24' 01.06622640" E
9	24° 14' 52.21785120" N	084° 24' 01.86200280" E
10	24° 14' 51.78665760" N	084° 24' 01.83252240" E
11	24° 14' 51.06714000" N	084° 24' 01.34280000" E
12	24° 14' 50.34782400" N	084° 24' 00.95313600" E
13	24° 14' 50.32545000" N	084° 23' 59.87895360" E
14	24° 14' 49.21891800" N	084° 23' 59.83069920" E
15	24° 14' 49.79538960" N	084° 23' 57.54526800" E
16	24° 14' 50.07739200" N	084° 23' 57.53814000" E

17	24° 14' 50.45571600" N	084° 23' 57.74164080" E
18	24° 14' 50.74433880" N	084° 23' 57.84828360" E
19	24° 14' 51.04654080" N	084° 23' 58.14592800" E
20	24° 14' 51.44613720" N	084° 23' 58.34708520" E
21	24° 14' 51.79480440" N	084° 23' 58.64422200" E
22	24° 14' 51.79611840" N	084° 23' 58.82140680" E
23	24° 14' 52.38253680" N	084° 23' 59.17190640" E
24	24° 14' 52.74621960" N	084° 23' 59.32428360" E
25	24° 14' 52.99391400" N	084° 23' 59.57128320" E
26	24° 14' 53.10279960" N	084° 23' 59.78509800" E
27	24° 14' 53.28111840" N	084° 23' 59.95699800" E
28	24° 14' 53.68734600" N	084° 24' 00.06350760" E
29	24° 14' 54.18634200" N	084° 24' 00.40665960" E
30	24° 14' 54.65450040" N	084° 24' 00.40348080" E
31	24° 14' 54.81360240" N	084° 24' 00.63881280" E
32	24° 14' 54.51964800" N	084° 24' 01.48204800" E
33	24° 14' 54.26169000" N	084° 24' 02.45031480" E
34	24° 14' 53.83796280" N	084° 24' 02.40642360" E
35	24° 14' 53.43265680" N	084° 24' 02.08447200" E

LAND DETAILS

Khata no.	Plot no.
21	58 (P), 60 (P) & 75 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 1551/M, dated 13.07.2023.
2	CO	:	The Additional Collector, Palamau vide letter no. 1352, dated 10.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Palamau, Medininagar vide memo no. 2741/M, dated 10.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no. 1015, dated 21.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Division Forest Officer, Medininagar Forest Division vide letter no. 2137, dated 06.07.2023 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 Palamau District (Sl. no. 08, Page no. 103).
7	Gram Sabha	:	BDO, Manatu, Palamau vide letter no. 496, dated 23.06.2023 informed that Gram Sabha conducted on 23.06.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology District Geological Officer, Palamau vide Letter No. 10, dated 16.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay 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	:	1.07 Ha	Life of Mine – 5year
3	Waste Generation	:	8161cum	
4	Stripping Ratio	:	02:05	
5	Working Days	:	300	
6	Benches: size	:	5 m x 5 m	
7	Elevation of Mine	:	384m–379m AMSL	
8	Ground Level Elevation	:	384 AMSL	
9	Ultimate Working Depth	:	21 m AMSL	
10	Water Table	:	Post Monsoon – 353m AMSL Pre Monsoon – 348 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	26.25 kg Nitro mix explosives/day	
13	Diesel/Fuel requirement	:	HSD – 260 liters / day (78 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	19276	2.8	53973	64	180	2806	9
2nd	15250	2.8	42700	51	142	0	0
3rd	22176	2.8	62093	74	207	3600	12

4th	18072	2.8	50602	60	169	0	0
5th	16155	2.8	45234	54	151	1755	6
Total	**90929**		**254601**	**74 (Max)**	**207 (Max)**	**8161**	**27**

Land Use pattern

Sl. No.	Pattern of Utilization	Present/Fxisting land use pattern in (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 Activities	0.000	0.620	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.000	Plantation
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.030	-
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.000	Green Belt
8	Safety Zone	0.000	0.420	Plantation
9	Stone Stock yards	0.000	0.000	
10	Unutilized	1.070	0.000	
11	Crusher	0.000	0.000	
Total		**1.070**	**1.070**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.402 Ha	672
2	Along Approach Road		320m	428
TOTAL				**1,100**

- 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.

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	Plantation 428 X 800 = Rs 3,42,400 (Gabion Plantation along approach road) 672 X 400 = 2,68,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,11,200	61,120
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		**7,11,200**	**5,64,340**

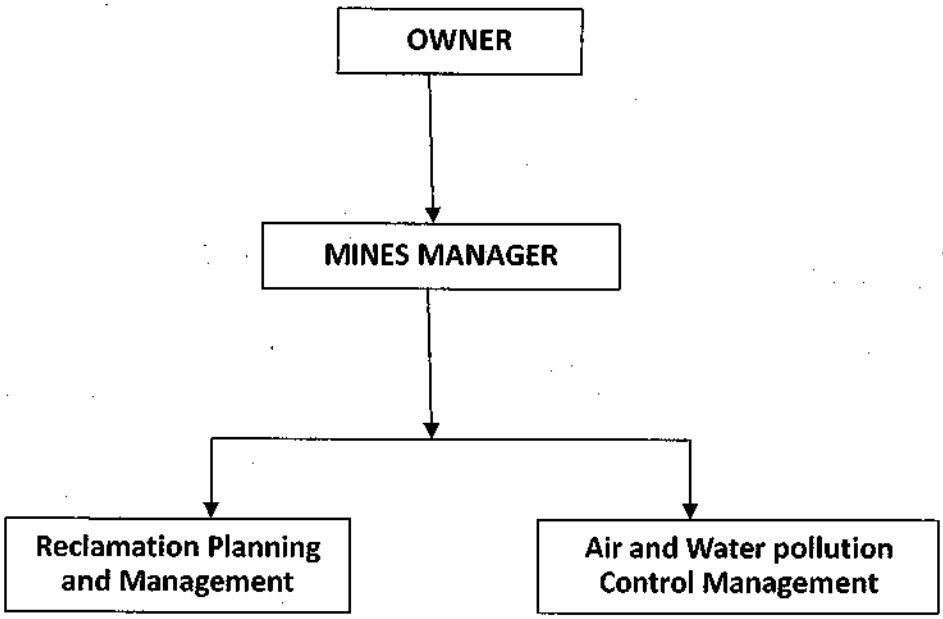
Environment Monitoring Programmed

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

8161cum. 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 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 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 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 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, thereby 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, injuryor 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 Nawa Stone Mine of Shri Animesh Kumar, Village : Nawa, Thana : Manatu, Distt. : Palamau, Jharkhand (1.07 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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25. Bindri Bandarkola Stone Deposite of M/s Hari Rama Construction (Partners : Shri Moka Ramakrishna and Shri T. Hari Krishna), Village : Bindri Bandarkola, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.954 Ha).

(Proposal no.: SIA/JH/MIN/ 523344 /2025)

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

This is a new project which has been taken for appraisal on 09.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 67539.30Cum. / annum or 182356.11TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bindri Bandarkola Stone Deposite	
2	Lessee:	:	(1) Shri Moka Ramakrishna (2) Sri T. Hari Krishna	
3	Lessee Address	:	Applicant M/s hari rama constructions Partner-shri moka ramakrishna & sri t. Hari krishna At –door no.-4/47, gadehothur, Village+post-vajrakarur mandal, District- anantpur, State- andhra pradesh	
4	Lease Area	:	2.954Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 99 Lakhs	Recurring Cost: Rs.

				10.035Lakhs
7	EMP Budget	:	Capital Cost: Rs. 6.376 Lakhs	Recurring Cost: Rs.5.8322 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 6,76,094.10cum	Tonnes: 18,25,454.08 tons
10	Mine Life	:	10 years.	
11	Man power	:	23Person	
12	Water Requirement	:	5.87 KLD (Drinking: 0.35 KLD, Dust Suppression: 1.40 KLD, Plantation: 4.12 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	60 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Ganga River – 16.23 km North-East direction	
17	Nearest Habitation	:	Patharghata Village – 1.23 Km in NEDirection	
18	Nearest Rail Station	:	Pathara Railway Station is at aerial distance of 6.80 km.	
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 114 km SW direction	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer ,sahibganj . letter no.-2627 Dated- 16/10/20	
21	Road & Highways	:	SH-18 (Sahibganj-Dumka road) is situated near about 1.1 km away from lease area in westernside	

CO-ORDINATES

Point Name	Longitude	Latitude
1	Latitude25° 02'32.330" N to 25° 02'39.741" N	
2	Longitude87°37'18.927" E to 87°37'28.635"E	

LAND DETAILS

Khata no.	Plot no.
36	723 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 739/M, dated 13.08.2024.
2	CO	:	The CO, Borio vide memo no. 56/Ra., dated 06.02.2020 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 619/M, dated 15.07.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 1703, dated 30.09.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2627, dated 16.10.2020 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 Sahibganj District (Sl. no. 01, Page no. 153).
7	Gram Sabha	:	Gram Sabha conducted on 22.09.2019.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 1176, dated 23.10.2024.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 231, dated 08.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	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	:	2.954 Ha	Life of Mine – 10year
3	Waste Generation	:	28782cum	
4	Stripping Ratio	:	11:10	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	252m–229m AMSL	
8	Ground Level Elevation	:	229 AMSL	
9	Ultimate Working Depth	:	36 m AMSL	
10	Water Table	:	Post Monsoon – 109m AMSL Pre Monsoon – 106m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	

12	Explosive Requirement	:	63 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 494 liters / day (73.8KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum
1st	66137.10	2.7	178570.17	220.46	595.23	23001
2nd	66487.65	2.7	179516.66	221.62	598.39	5781
3rd	66487.65	2.7	180463.14	221.62	601.54	0
4th	67539.30	2.7	182356.11	225.13	607.85	0
5th	67539.30	2.7	182356.11	225.13	607.85	0
Total	334541.55	2.7	903262.19	136.23 Max	607.85 Max	28782

Land Use pattern

SL	Pattern of Utilization	Existing Land Use (Ha)	At the end of plan period (Ha)	Conceptual period (Ha)
1	Quarry	0.000	1.202	2.442 (0.208Ha area shall be backfilled, 1.637 ha area shall be left as water reservoir and 0.596 ha let as dead benches)
2	Waste Dump	0.000	0.463	Nil (waste dump to be removed and backfilled)
3	Road	0.000	0.029	0.000
4	Safety Zone Plantation	0.000	0.583	0.583
6	Unused Area		0.313	0.000
	Total Lease Area	**2.833**	**2.833**	**2.833**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone/ Dumping/		0.513 Ha	821

	Offices/ Store etc.			
2	Along Approach Road		330m	220
TOTAL				**1041**

- 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.

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)	--	3,30,000
2	Plantation 560 X 800 = Rs 4,48,000 (Gabion Plantation along approach road) 932 X 400 = 3,72,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,37,600	50,000
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

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
Total		7,37,600	5,83,220

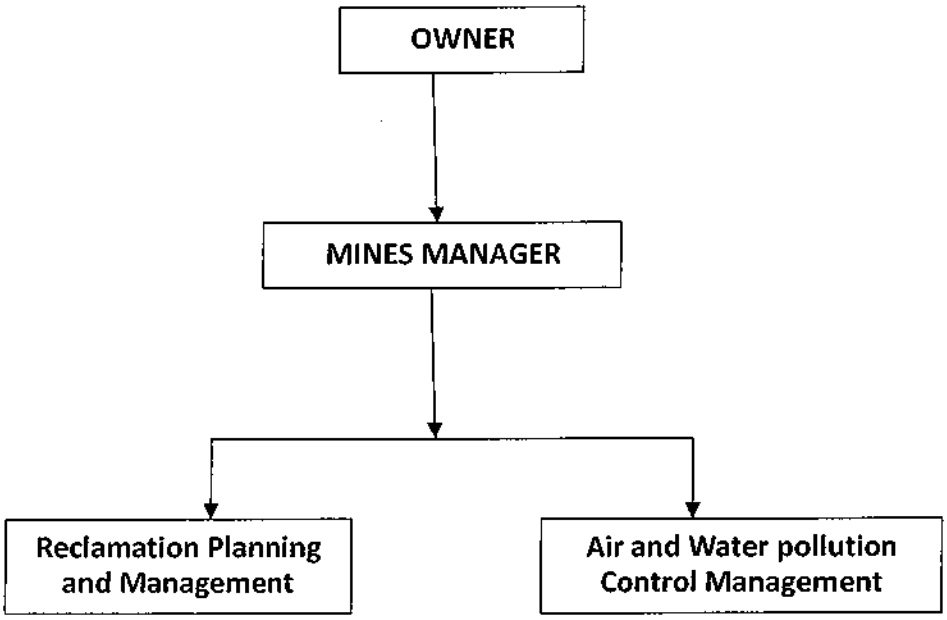
Environment Monitoring Programmed

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

28782cum. 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 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 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 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 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, thereby 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, injuryor 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 Bindri Bandarkola Stone Deposite of M/s Hari Rama Construction (Partners : Shri Moka Ramakrishna and Shri T. Hari Krishna), Village : Bindri Bandarkola, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.954 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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26. Pipaljori Stone Mine of M/s Om Stone Works (Prop. : Shri Gyan Prakash Singh), Village : Pipaljori, Thana : Kotalpokhar, Distt. : Sahibganj, Jharkhand (4.29 Ha).

(Proposal no.: SIA/JH/MIN/ 517108 /2025)

Name of the consultant : Sathi Planners 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/2017-18/110, dated 19.03.2018.

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 09.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 738/M, dated 13.08.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 2191, dated 14.10.2023.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 203095 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	PipaljoriStone Mine	
2	Lessee:	:	M/S Om Stone Works Shri Gyan Prakash Singh	
3	Lease Address	:	Shri Gyan Prakash Singh S/O-Late Ram Narayan Singh Jay Mangal Complex, P.O.- Mahendru, District- Patna , Bihar	
4	Lease Area	:	4.29 ha.	10.59 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 49.55 Lakhs	
7	EMP Budget	:	Capital: Rs. 10.58 Lakhs	Recurring: 5.99 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	2005872 tons	
10	Mine Life	:	Upto the lease period i.e. 25.01.2019 to 24.01.2029.	

11	Man power	:	24
12	Water Requirement	:	7.50 KLD (Drinking: 0.510 KLD, Dust Suppression: 1.7 KLD, Plantation: 5.298 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	20 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	River Ganga – 14.3 Km in East direction.(aerial distance).
17	Nearest Habitation	:	Pipaljori Village –0.8 Km
18	Nearest Railway Station	:	Kotalpukur Railway Station at 3.40 km (aerial distance) E direction
19	Nearest Air Port	:	Deoghar Airport 115 Km (arial distance) at SW direction.
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 1600 Dated: 13/11/2016
21	Road & Highways	:	A well motorable road is connected to the mine site at a distance of 240 m East direction The mine can be approached by 133A (Barharwa-Rajmal Rd) at 6 km (aerial distance) in west direction And SH (Barharwa-Pakur Rd) at 2.90 km in East Direction from applied area.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary

(GPS Co-ordinates)

Point No.	Latitude	longitude
1	24°44'43.68"N	87°47'26.98"E
2	24°44'44.30"N	87° 34' 26.322" E
3	24°44'49.05"N	87° 34' 28.193" E
4	24°44'50.78"N	87°47'20.57"E
5	24°44'52.09"N	87°47'26.66"E
6	24°44'50.76"N	87°47'30.28" E

LAND DETAILS

Khata no.	Plot no.
13	42
35	43 (P)
49	45 (P) & 46 (P)
63	37, 38 & 41
32	39, 40, 44 (P), 55, 56, 57, 58, 59, 60 & 61 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1622/M, dated 03.11.2017. ii. Lease deed 25.01.2019 to 24.01.2029.
2	CO	:	The CO, Barharwa, Sahibganj vide memo no. 1479/Ra., dated 23.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 424/M, dated 07.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 273, dated 06.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide letter no. 1600, dated 03.11.2016 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. 93, Page no. 139).
7	Gram Sabha	:	Gram Sabha conducted on 01.12.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Sahibganj vide letter no. 1033/M, dated 11.10.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/110 (M), dated 19.03.2018.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 2191, dated 14.10.2023.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-4821659 /2019/296, dated 01.05.2019.
12	Consent to Operate (CTO)	:	i. CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-7864251 /2020/53, dated 29.05.2020. ii. CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-18819806 /2024/116, dated 18.04.2024.

13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 738/M, dated 13.08.2024.
14	Grid certificate	:	DMO, Sahibganj vide memo no. 252/M, dated 11.02.2025 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
15	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 12.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	4.29 Ha	Life of Mine – 10 years
3	Waste Generation	:	26305 cum	
4	Stripping Ratio	:	1:4	
5	Working Days	:	300	
6	Benches: size	:	3 m x 3 m,	
7	Elevation of Mine	:	193 m AMSL	
8	Ground Level Elevation	:	198 m AMSL	
9	Ultimate Working Depth	:	90 m AMSL	
10	Water Table	:	Post Monsoon – 75 m AMSL Pre Monsoon – 72 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	93.5 Kg/day slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 206 liters / day (61.8 KL/year)	

Production Details

Years	Production of stone in Cum /Year	Production of Stone in Tones/Year	Production of intercalated waste in Cum/Year	Total Waste in Cum/year	Production of O.B in Cum /Year
1st	70032.75	203095	3502	3502	0
2nd	70022.74	203066	3501	3501	0
3rd	70032.76	203095	3502	3502	0
4th	70030.69	203089	3502	3502	0
5th	70024.84	203072	3501	3501	0

Total	**350143.79**	**1015417**	**17508**	**17508**	**0**

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	Mining Activities	3.58	3.58	3.58	Water body
2	Crusher	0.00	0.00	0.00	
3	Dumping	0.01	0.01	0.01	Greenbelt
4	Mining Road	0.00	0.00	0.00	Water body
5	Garland drain	0.00	0.00	0.00	--
6	Safety Zone	0.00	0.70	0.70	Greenbelt
7	Utilized	3.59	3.59	3.59	
8	Unutilized	0.70	0.00	0.00	
	TOTAL	**4.29**	**4.29**	**4.29**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.70 Ha	1120
2	Dumping		0.01 Ha	16
2	Along Approach Road		0.315 km	630
TOTAL				**1,766 Trees**

- 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.

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	Plantation 630 X 800 = Rs 504,000 (Gabion Plantation along approach road) 1136 X 400 = 454400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	9,58,400	95,840
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**		2,03,220
Total		**10,58,400**	**5,99,060**

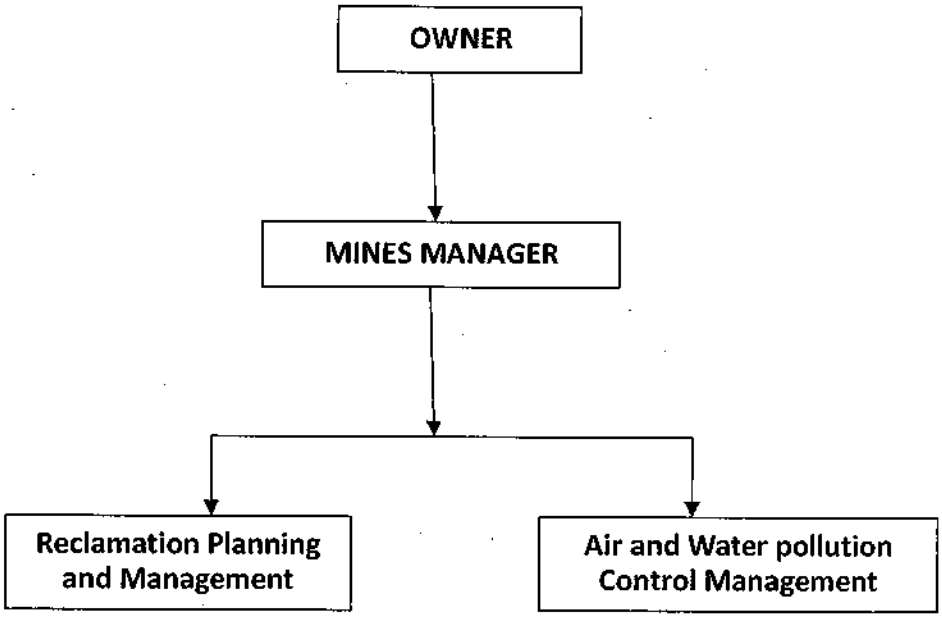
Environment Monitoring Programme:

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

26305 cum. 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 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 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 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 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, thereby 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank	L5 (Very	L4 (Remote)	L3	L2	L1

(Likelihood x Consequence)	Unlikely)		(Occasional)	(Probable)	(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 Pipaljori Stone Mine of M/s Om Stone Works (Prop. : Shri Gyan Prakash Singh), Village : Pipaljori, Thana : Kotalpokhar, Distt. : Sahibganj, Jharkhand (4.29 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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.

****

Day 3 : March 10th, 2025 [Monday]

Consideration of Proposals

1. **Chagjo Stone Mine of M/s Star Mark Stone LLP (Partners : Mr. Vivek Kumar Dokania), Village : Chagjo, Thana : Pathna, Distt. : Sahibganj, Jharkhand (2.063 Ha).**

(Proposal no.: SIA/JH/MIN/ 523964 /2025)

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

This is a new project which has been taken for appraisal on 10.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 76,857 CUM / 2,15,200 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chagjo Stone Mine	
2	Lessee:	:	M/s Star Mark Stone LLP Partner: Mr. Vivek Kumar Dokania	
3	Lessee Address	:	Mr. Vivek Kumar Dokania S/o Santosh Kumar Dokania, Main Road, Barharwa, P.O + Thana – Barharwa, District - Sahibganj, Jharkhand.	
4	Lease Area	:	2.063 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 130.185 Lakhs	Recurring Cost: Rs.24.775 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 6.63Lakhs	Recurring Cost: Rs.5.05 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 2,77,973 Cum	Tonnes: 7,78,324 Tons
10	Mine Life	:	5 years.	
11	Man power	:	32Person	
12	Water Requirement	:	4.97 KLD (Drinking: 0.48 KLD, Dust Suppression: 1.40 KLD Plantation: 3.717KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	

15	Crusher	:	No crusher
16	Nearest Water Body	:	Gumani River – 2.33 km – SW direction.
17	Nearest Habitation	:	Barharwa Town – 5 km in the SE direction.
18	Nearest Rail Station	:	Barharwa Junction Railway Station is at areal distance of 5.45 km SE direction.
19	Nearest Air Port	:	Deoghar Airport is at areal distance of 115 km SW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Medninagar. letter no.- 1103 Dated: 28.06.2021
21	Road & Highways	:	NH-133A (Barharwa-Rajmahal Road) is at areal distance of 4.35 km E direction.

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 53' 33.63300558" N	087° 44' 05.53851094" E
2	24° 53' 32.65407382" N	087° 44' 05.80830838" E
3	24° 53' 32.02225612" N	087° 44' 05.98356293" E
4	24° 53' 31.36190375" N	087° 44' 06.10938671" E
5	24° 53' 30.97465962" N	087° 44' 06.14983007" E
6	24° 53' 30.43659354" N	087° 44' 06.05995594" E
7	24° 53' 30.19609409" N	087° 44' 06.10489300" E
8	24° 53' 30.04934860" N	087° 44' 06.16331119" E
9	24° 53' 29.49905259" N	087° 44' 06.64863149" E
10	24° 53' 29.57650170" N	087° 44' 06.88230422" E
11	24° 53' 29.63764572" N	087° 44' 07.24180074" E
12	24° 53' 29.63764572" N	087° 44' 07.65072803" E
13	24° 53' 29.36959025" N	087° 44' 07.78535948" E
14	24° 53' 28.87391549" N	087° 44' 07.91765420" E
15	24° 53' 28.61825144" N	087° 44' 07.94928989" E
16	24° 53' 28.43824300" N	087° 44' 07.71633615" E
17	24° 53' 27.32454723" N	087° 44' 07.24285748" E
18	24° 53' 27.63150281" N	087° 44' 06.36700671" E
19	24° 53' 27.01744729" N	087° 44' 06.06049001" E
20	24° 53' 27.23643373" N	087° 44' 05.02887977" E
21	24° 53' 27.45471731" N	087° 44' 04.00058014" E
22	24° 53' 28.42519891" N	087° 44' 02.75528420" E
23	24° 53' 28.71999532" N	087° 44' 01.91550033" E
24	24° 53' 28.47244751" N	087° 44' 01.87363896" E
25	24° 53' 29.29217988" N	087° 44' 01.09236186" E
26	24° 53' 29.97801109" N	087° 44' 00.43870324" E
27	24° 53' 30.49876191" N	087° 44' 01.34532352" E
28	24° 53' 31.03917380" N	087° 44' 02.28617457" E

29	24° 53' 31.62157000" N	087° 44' 03.30012114" E
30	24° 53' 32.56695957" N	087° 44' 04.35217961" E

LAND DETAILS

Khata no.	Plot no.
02, 06, 03, 07, 05 & 08	06 (P), 12 (P), 13 (P), 14, 15 (P), 17 (P) & 18 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1364/M, dated 12.12.2024.
2	CO	:	The CO, Patna, Sahibganj vide letter no. 662/Ra., dated 24.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1365/M, dated 12.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 572, dated 17.03.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 1103, dated 28.06.2021 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 Sahibganj District (Sl. no. 40, Page no. 169).
7	Gram Sabha	:	Gram Sabha conducted on 08.02.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 160, dated 05.02.2025.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 240, dated 10.02.2025 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
10	Qualified Person	:	Shri Malay Kumar Mukhopadhyay 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	:	2.063 Ha	Life of Mine – 5year
3	Waste Generation	:	37949 cum	
4	Stripping Ratio	:	41:25	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	164m–129m AMSL	
8	Ground Level Elevation	:	129 AMSL	
9	Ultimate Working Depth	:	38 m AMSL	
10	Water Table	:	Post Monsoon – 99m AMSL Pre Monsoon – 98m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	49.20 kg Nitro mix explosives/day	
13	Diesel/Fuel requirement	:	HSD – 228.66 liters / day (68.598 KL/year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION						
Year	**Production in Cum/Year**	**Production in Cum/Day**	**O.B. in Cum/Year**	**Top Soil in Cum/Year**	**Production in Tons/Year**	**Production in Tons. /Day**
1st	49183	164	23016	-	137712	459
2nd	76857	256	14933	-	215200	717
3rd	54115	180	0	-	151522	505
4th	50690	169	0	-	141932	473
5th	47128	157	0	-	131958	440
Total	**277973**	**256 (Max)**	**37949**	**-**	**778324**	**717 (Max)**

Land Use pattern

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (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 Activities	0.000	1.471	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.000	Plantation

4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.0325	Included within Safety Zone
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.000	Green Belt
8	Safety Zone	0.000	0.475	Plantation
9	Stone Stock yards	0.000	0.000	
10	Unutilized	2.063	0.117	
11	Crusher	0.000	0.000	
Total		**2.063**	**2.063**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.592 Ha	947
2	Along Approach Road		220 m	292
TOTAL				**1239**

- 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.

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. 800 per Tanker)	--	**2,40,000**
2	Plantation 448 X 800 = Rs 3,58,400 (Gabion Plantation along approach road) 1122 X 400 = 4,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	**6,12,400**	**61,240**
3	Fencing	**50,325**	-

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		**6,62,725**	**5,04,460**

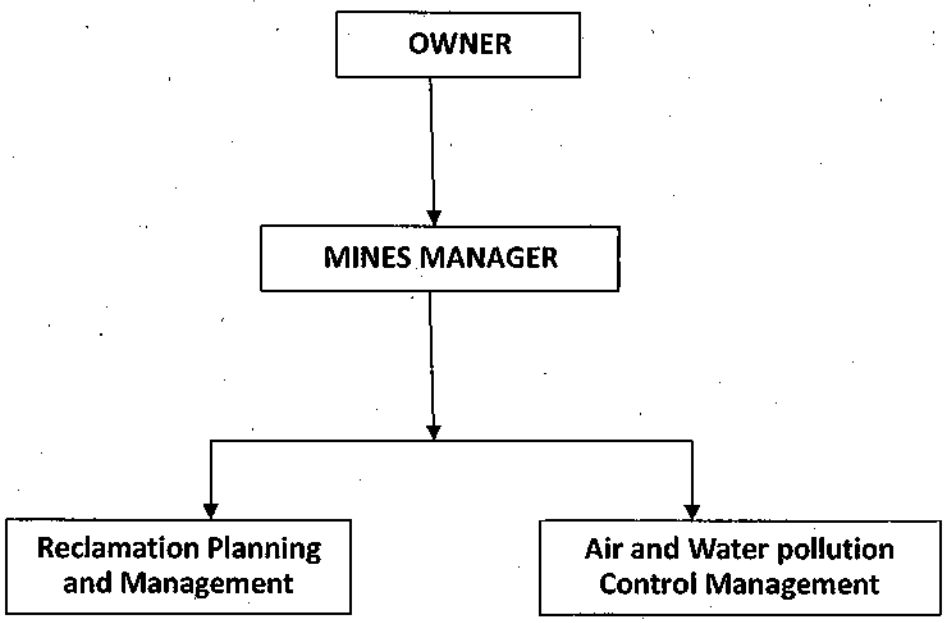
Environment Monitoring Programmed

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

8161cum. 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 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 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 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 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, thereby 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, injuryor 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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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 Chagjo Stone Mine of M/s Star Mark Stone LLP (Partners : Mr. Vivek Kumar Dokania), Village : Chagjo, Thana : Pathna, Distt. : Sahibganj, Jharkhand (2.063 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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2. **Chitragaria Stone Mine of Mr. Naiyamuddin Ansari, Village : Chitragaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.49 Ha).**

(Proposal no.: SIA/JH/MIN/ 523903 /2025)
Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 10.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 50018 CUM. (MAX.) / 135047 TONS (MAX.) TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chitragaria stone Mine	
2	Lessee:	:	Naiyamuddin Ansari, S/o – Late Jabbar Ansari	
3	Lessee Address	:	Naiyamuddin Ansari S/o – Late Jabbar Ansari Vill- Chitragaria, P.O- Benagaria Thana- Shikaripara, District- Dumka, State- Jharkhand. Naiyamuddin Ansari involved in Business &having immense experience in the fields of building stone quarrying and allied business.	
4	Lease Area	:	1.49 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 133.55Lakhs	Recurring Cost: Rs.9.45 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 5.62Lakhs	Recurring Cost: Rs. 5.85 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 176369 cum	Tonnes: 476197 tons
10	Mine Life	:	5 years.	
11	Man power	:	27Person	
12	Water Requirement	:	5.52 KLD (Drinking: 0.405 KLD, Dust Suppression: 1.26 KLD Plantation: 3.855KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Brahmani River – 6.64 km North direction	

17	Nearest Habitation	:	Chitrapara village –1 km
18	Nearest Rail Station	:	Pakdaha Harinsing Railway Station at aerial distance of7.15 km at Northdirection.
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 97km at North West direction.
20	Nearest Forest	:	DFO (Dumka), letter no.- 2477 Dated: 25.11.2024 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	Approach Road is 315m, after that, this road connects to NH-114A (Dumka-Rampurhat road), at 1.71 km at North Direction.

CO-ORDINATES

POINTNAME	LATITUDE	LONGITUDE
1	24°11'27.45056392"N	087°37'27.81728926"E
2	24°11'27.71127506"N	087°37'26.83769675"E
3	24°11'28.26502860"N	087°37'26.42345989"E
4	24°11'28.38852877"N	087°37'26.30946534"E
5	24°11'28.43556866"N	087°37'26.18435520"E
6	24°11'28.59139923"N	087°37'26.01991574"E
7	24°11'28.67809535"N	087°37'25.99280337"E
8	24°11'28.67860136"N	087°37'25.43222712"E
9	24° 11' 28.72188274" N	087° 37' 24.99395109" E
10	24° 11' 28.97831367" N	087° 37' 24.92439895" E
11	24° 11' 29.15143257" N	087° 37' 24.94490593" E
12	24° 11' 29.41536455" N	087° 37' 24.91746058" E
13	24° 11' 29.59280702" N	087° 37' 24.65205219" E
14	24° 11' 29.86428528" N	087° 37' 24.43310563" E
15	24° 11' 29.94038682" N	087° 37' 24.43654163" E
16	24° 11' 30.07423165" N	087° 37' 24.27348999" E
17	24° 11' 30.25758918" N	087° 37' 24.30276264" E
18	24° 11' 30.60961886" N	087° 37' 23.92932704" E
19	24° 11' 30.95366279" N	087° 37' 23.61633314" E
20	24° 11' 31.28878382" N	087° 37' 23.72022983" E

21	24° 11' 31.49085331" N	087° 37' 23.76936850" E
22	24° 11' 31.78328477" N	087° 37' 23.80928385" E
23	24° 11' 31.97979833" N	087° 37' 23.84154466" E
24	24° 11' 32.28352788" N	087° 37' 23.85377156" E
25	24° 11' 32.61846178" N	087° 37' 23.81259497" E
26	24° 11' 32.87822863" N	087° 37' 23.73028669" E
27	24° 11' 33.05748699" N	087° 37' 23.74424451" E
28	24° 11' 33.25526962" N	087° 37' 23.63313282" E
29	24° 11' 33.39778664" N	087° 37' 23.73464428" E
30	24° 11' 33.54467071" N	087° 37' 23.75416221" E
31	24° 11' 34.08277135" N	087° 37' 23.75617483" E
32	24° 11' 34.05356600" N	087° 37' 23.95681311" E
33	24° 11' 34.04433034" N	087° 37' 24.14801346" E
34	24° 11' 34.15503206" N	087° 37' 24.23763089" E
35	24° 11' 33.92876484" N	087° 37' 24.86587064" E
36	24° 11' 33.78948306" N	087° 37' 25.40406413" E
37	24° 11' 33.62923874" N	087° 37' 25.76515598" E
38	24° 11' 33.44764645" N	087° 37' 26.05927495" E
39	24° 11' 33.33328455" N	087° 37' 26.31580077" E
40	24° 11' 33.64427144" N	087° 37' 26.50108342" E
41	24° 11' 33.33411648" N	087° 37' 27.39098598" E
42	24° 11' 33.20591942" N	087° 37' 27.61967926" E
43	24° 11' 33.05594472" N	087° 37' 27.77525491" E
44	24° 11' 32.90992850" N	087° 37' 27.76616459" E
45	24° 11' 32.59531717" N	087° 37' 27.61648685" E
46	24° 11' 32.35143168" N	087° 37' 27.44906561" E
47	24° 11' 32.03800496" N	087° 37' 27.40706073" E
48	24° 11' 32.02846237" N	087° 37' 27.23630720" E
49	24° 11' 31.74460898" N	087° 37' 26.95172424" E
50	24° 11' 31.22644473" N	087° 37' 26.60700196" E
51	24° 11' 30.59946346" N	087° 37' 26.41121851" E

52	24° 11' 30.12518616" N	087° 37' 26.31436307" E
53	24° 11' 29.84895103" N	087° 37' 26.83727805" E
54	24° 11' 29.44305814" N	087° 37' 27.73898894" E
55	24° 11' 29.22032372" N	087° 37' 28.10714854" E
56	24° 11' 29.00563147" N	087° 37' 28.00432824" E
57	24° 11' 28.82284208" N	087° 37' 27.91579197" E
58	24° 11' 28.38923569" N	087° 37' 27.85972565" E
59	24° 11' 28.07267001" N	087° 37' 27.85376082" E
60	24° 11' 27.76415488" N	087° 37' 27.85889419" E

LAND DETAILS

Khata no.	Plot no.
25	909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926 & 927

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 1371/M, dated 16.12.2024.
2	CO	:	The CO, Shikaripara vide letter no. 908/Ra., dated 15.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 35/M, dated 08.01.2025 certified that 01 other mining lease area (5.55 Acre) exists within 500 meters radius from proposed project site and total area is 9.24 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2380, dated 28.11.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 2477, dated 25.11.2024 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 Dumka District (Sl. no. 27).
7	Gram Sabha	:	Gram Sabha conducted on 15.05.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 224/M, dated 28.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OpencastMechanized Method	
2	Quarry Area	:	1.49 Ha	Life of Mine – 5year
3	Waste Generation	:	18792 cum	
4	Stripping Ratio	:	17:10	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	96 m–93 m AMSL	
8	Ground Level Elevation	:	93AMSL	
9	Ultimate Working Depth	:	32 m AMSL	
10	Water Table	:	Post Monsoon –52m AMSL Pre Monsoon – 50m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	42.76 kg/day mix explosives	
13	Diesel/Fuel requirement	:	HSD – 274 liters / day (82.2 KL/year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION							
	Production of Stone / Year			**Per Day Production**		**Removal of O.B.**	
Year	**Cum recoverable 95%**	**T.F**	**Tonnes**	**Cum**	**Tonnes**	**Cum**	**Production per day cum (O.B.)**
1st	**23701**	**2.7**	63992	79	213	10854	36
2nd	**21392**	**2.7**	57759	71	193	7938	26
3rd	**45324**	**2.7**	122374	151	408	0	0

4th	35705	2.7	96403	119	321	0	0
5th	50018	2.7	135047	167	450	0	0
Total	176139	2.7	475574	167(MAX)	6683	18792	63

Land Use pattern

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (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 Activities	0.000	0.864	Water body
2	Offices/ Store etc.	0.000	0.000	Greenbelt
3	Dumping	0.000	0.097	Greenbelt
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.0306	--
6	Settling Tank	0.000	0.0306	-
7	Green belt	0.000	0.097	Greenbelt
8	Safety Zone	0.000	0.448	---
9	Stone Stock Yards	0.000	0.000	
10	Unutilized	0.000	0.000	
	Crusher (Mobile Crusher)	0.000	0.000	
Total		1.49	1.49	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.448 Ha	716
2	Along Approach		0.315m	210

	Road			
TOTAL				**1285**

- 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.

- **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. 800 per Tanker)	--	**3,30,000**
2	Plantation 448 X 800 = Rs 3,58,400 (Gabion Plantation along approach road) 1122 X 400 = 4,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	**514000**	**51400**
3	Fencing	**47,100**	-
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		**561,100**	**584,620**

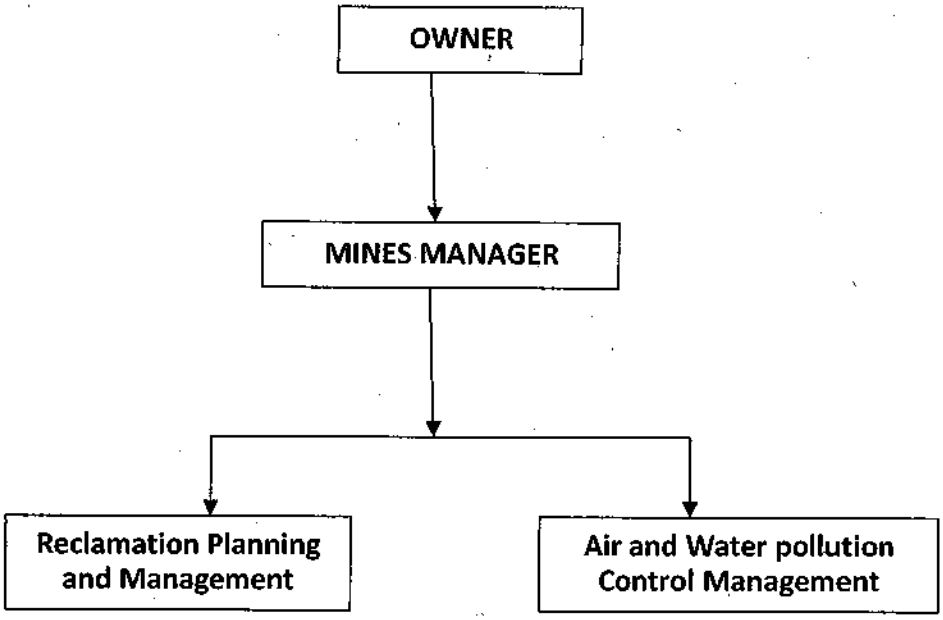
Environment Monitoring Programmed

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

8161cum. 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 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 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 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 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, thereby 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, injuryor 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 repor issued by the mines department, then the applicable laws / rules will be binding 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 proper
e. One day post monsoon baseline data related to environment monitoring 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. Any tree felling than necessary permission shall be taken from the competent authority prior to start of work.
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 Chitragaria Stone Mine of Mr. Naiyamuddin Ansari, Village : Chitragaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.49 Ha) is recommended for grant of EC. The various condltions for grant of EC is enclosed as Annexure – II 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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3. **Benagaria Stone Mine of M/s MNS Hospitalities Pvt. Ltd. (Director : Shri Manoj Kumar Yadav), Village : Benagaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.43 Ha).**

(Proposal no.: SIA/JH/MIN/ 522927 /2025)

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

This is a new project which has been taken for appraisal on 10.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 493302CUM / 1311277 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Benagaria Stone Mine	
2	Lessee:	:	Dir. Shri Manoj Kumar Yadav	
3	Lessee Address	:	Firm MNS Hospitalities Pvt. Ltd. The name of the Director is Manoj Kumar Yadav, S/o – Late Saputlal Yadav, Vill- M.S. Tower Khutabandh, Dangalpara, Thana- Shikaripara, District- Dumka, State- Jharkhand.	
4	Lease Area	:	2.43Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 10.328Lakhs	Recurring Cost:

				Rs.6.065Lakhs
7	EMP Budget	:	Capital Cost: Rs. 177.54Lakhs	Recurring Cost: Rs.25.00 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 493302 Cum	Tonnes: 1331915Tons
10	Mine Life	:	5 years.	
11	Man power	:	35Person	
12	Water Requirement	:	7.569KLD (Drinking: 0.525 KLD, Dust Suppression: 1.404 KLD Plantation: 5.640KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Padma River – 87.8 km North direction	
17	Nearest Habitation	:	Amchua Village – 0.57 Km in SE Direction	
18	Nearest Rail Station	:	PakdahaHarinsing Railway Station at aerial distance of 6 km at North direction.	
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 97 km at North West direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.-2275 Dated- 08/10/24	
21	Road & Highways	:	The distance of Approach Road is 351m, after that, this road connects to NH-114A (Dumka-Rampurhat road), at 3.5 km at North Direction.	

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 53' 33.63300558" N	087° 44' 05.53851094" E
2	24° 53' 32.65407382" N	087° 44' 05.80830838" E
3	24° 53' 32.02225612" N	087° 44' 05.98356293" E
4	24° 53' 31.36190375" N	087° 44' 06.10938671" E
5	24° 53' 30.97465962" N	087° 44' 06.14983007" E
6	24° 53' 30.43659354" N	087° 44' 06.05995594" E
7	24° 53' 30.19609409" N	087° 44' 06.10489300" E
8	24° 53' 30.04934860" N	087° 44' 06.16331119" E
9	24° 53' 29.49905259" N	087° 44' 06.64863149" E
10	24° 53' 29.57650170" N	087° 44' 06.88230422" E
11	24° 53' 29.63764572" N	087° 44' 07.24180074" E
12	24° 53' 29.63764572" N	087° 44' 07.65072803" E

13	24° 53' 29.36959025" N	087° 44' 07.78535948" E
14	24° 53' 28.87391549" N	087° 44' 07.91765420" E
15	24° 53' 28.61825144" N	087° 44' 07.94928989" E
16	24° 53' 28.43824300" N	087° 44' 07.71633615" E
17	24° 53' 27.32454723" N	087° 44' 07.24285748" E
18	24° 53' 27.63150281" N	087° 44' 06.36700671" E
19	24° 53' 27.01744729" N	087° 44' 06.06049001" E
20	24° 53' 27.23643373" N	087° 44' 05.02887977" E
21	24° 53' 27.45471731" N	087° 44' 04.00058014" E
22	24° 53' 28.42519891" N	087° 44' 02.75528420" E
23	24° 53' 28.71999532" N	087° 44' 01.91550033" E
24	24° 53' 28.47244751" N	087° 44' 01.87363896" E
25	24° 53' 29.29217988" N	087° 44' 01.09236186" E
26	24° 53' 29.97801109" N	087° 44' 00.43870324" E
27	24° 53' 30.49876191" N	087° 44' 01.34532352" E
28	24° 53' 31.03917380" N	087° 44' 02.28617457" E
29	24° 53' 31.62157000" N	087° 44' 03.30012114" E
30	24° 53' 32.56695957" N	087° 44' 04.35217961" E

LAND DETAILS

Khata no.	Plot no.
14, 22, 24, 25, 37, 39, 40	589(P), 590(P), 599 (P) ,593, 594, 595, 596(P), 597(P), 598(P), 600(P), 601(P), 602, 603(P), 604(P), 605(P), 609(P), 614(P), 667, 606, 666

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 1150/M, dated 09.10.2024.
2	CO	:	The CO, Shikaripara vide letter no. 895/Ra., dated 08.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 1332/M, dated 07.12.2024 certified that 01 other mining lease area (6.16 Acre) exists within 500 meters radius from proposed project site and total area is 12.17 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2166, dated 09.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.

5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 2275, dated 08.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Dumka has been certified vide memo no. 453/M, dated 01.03.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Sl. no. 94, Page no. 319).
7	Gram Sabha	:	Gram Sabha conducted on 12.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 209/M, dated 27.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OpencastMechanized Method	
2	Quarry Area	:	2.43 ha	Life of Mine – 5year
3	Waste Generation	:	35462cum	
4	Stripping Ratio	:	01:01	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	86m–49m AMSL	
8	Ground Level Elevation	:	49 AMSL	
9	Ultimate Working Depth	:	37 m AMSL	
10	Water Table	:	Post Monsoon –37m AMSL Pre Monsoon – 39m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	96.6 kg Nitro mix explosive.	
13	Diesel/Fuel requirement	:	356.46 liters / day (106.93 KL/year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum recoverable 95%	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)

1st	93140	2.7	251478	310	838	35462	118
2nd	101916	2.7	275173	340	917	0	0
3rd	90875	2.7	245363	303	818	0	0
4th	114797	2.7	309952	383	1033	0	0
5th	84930	2.7	229311	283	764	0	0
Total	485658	2.7	1311277	383(MAX)	1033(MAX)	35462	118

Land Use pattern

Sl. No.	Pattern ofUtilization	Present/Existing land use pattern in (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 Activities	0.000	1.41	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.117	Plantation -
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.056	Included within Safety Zone
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.09	Green Belt
8	Safety Zone	0.000	0.822	Plantation
9	Stone Stock yards	0.000	0.000	
10	Unutilized	2.43	0.000	
11	Crusher (Mobile Crusher)	0.000	0.000	
Total		2.43	2.43	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		1.029 Ha	1646
2	Along Approach Road		351m	468
TOTAL				**1880**

- 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.

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. 800 per Tanker)	--	**3,00,000**
2	Plantation 448 X 800 = Rs 3,58,400 (Gabion Plantation along approach road) 1122 X 400 = 4,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	**10, 32,800**	**1,03,280**
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)	--	**2,03,220**

	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		
Total		**11,32,800**	**Rs 6,06,500**

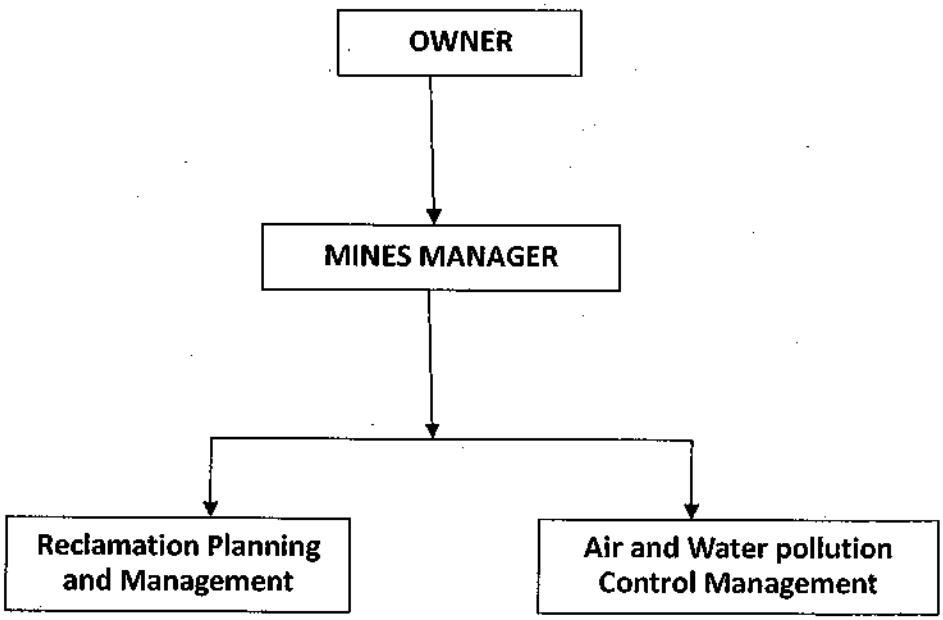
Environment Monitoring Programmed

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

35462cum. 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 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 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 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 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, thereby 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, injuryor 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 Benagaria Stone Mine of M/s MNS Hospitalities Pvt. Ltd. (Director : Shri Manoj Kumar Yadav), Village : Benagaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.43 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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4. **Bagcha Maqo Stone Mine of M/s Sahni Enterprises (Prop. : Shri Bhola Kumar Sahni), Village : Bagcha Maqo, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.73 Ha).**

(Proposal no.: SIA/JH/MIN/ 522661 /2025)

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

This is a new project which has been taken for appraisal on 10.03.2025.

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: 95030CUM. (MAX.) / 266084 TONS (MAX.) TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	BagchaMaqo Stone Mine	
2	Lessee:	:	M/s Sahni Enterprises Shri Bhola Kumar Sahni	
3	Lessee Address	:	18 Aditya Nagar Colony, Jawar, Dist.- Ratlam (MP).	
4	Lease Area	:	2.73 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. Rs.132.39Lakhs	Recurring Cost: Rs.60.74 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 7.76Lakhs	Recurring Cost: Rs. 6.02Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 525070cum	Tonnes: 1470196 tons
10	Mine Life	:	10 years.	
11	Man power	:	27Person	
12	Water Requirement	:	6.4 KLD (Drinking: 0.405 KLD, Dust Suppression: 1.42 KLD, Plantation: 4.536 KLD	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	River Ganga –10.30 Km in North -West direction	
17	Nearest Habitation	:	BagchaMaqo Village –0.600 Km	
18	Nearest Rail Station	:	Kalian Chak Railwaystationis at 7 km (Aerial distance)in South - East Direction.	
19	Nearest Air Port	:	Deoghar Airport - 119 km SW direction. (aerial distance)	
20	Nearest Forest	:	DFO Territorial (Sahebganj) Forest Division.-letter no.- 2375 Dated- 26/09/24 certified that the distance of reserved / protected forest is more than 250 m from proposed project site..	
21	Road & Highways	:	the distance of Approach Road is 305m, after that, this road connects to village road. The village road continues for 2.63 km and after this the road connects to MDR Rajmahal – Tinpahar – Borio Road.	

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates)

Point Name	Latitude	Longitude
1	25° 03' 36.82098101" N	087° 40' 24.40642278" E
2	25° 03' 36.94302303" N	087° 40' 26.82343931" E
3	25° 03' 37.07467864" N	087° 40' 28.83120045" E
4	25° 03' 37.56621575" N	087° 40' 30.41915270" E
5	25° 03' 38.03984164" N	087° 40' 31.95099999" E
6	25° 03' 38.49684859" N	087° 40' 33.28104703" E
7	25° 03' 38.90129390" N	087° 40' 34.47543590" E
8	25° 03' 37.38652266" N	087° 40' 33.78501495" E
9	25° 03' 36.61381737" N	087° 40' 33.45114629" E
10	25° 03' 35.45365864" N	087° 40' 32.87841519" E
11	25° 03' 34.82133956" N	087° 40' 33.32896609" E
12	25° 03' 34.21500394" N	087° 40' 33.80408391" E
13	25° 03' 33.54302753" N	087° 40' 34.27959866" E
14	25° 03' 32.91316837" N	087° 40' 34.83964936" E
15	25° 03' 32.23963447" N	087° 40' 34.11356476" E
16	25° 03' 31.55772372" N	087° 40' 33.34336295" E
17	25° 03' 32.47784391" N	087° 40' 31.78328006" E
18	25° 03' 33.09478842" N	087° 40' 30.71210703" E
19	25° 03' 33.92077508" N	087° 40' 29.23623638" E
20	25° 03' 34.43417141" N	087° 40' 28.42167961" E
21	25° 03' 34.86903128" N	087° 40' 27.68751125" E
22	25° 03' 35.59314708" N	087° 40' 26.50683758" E
23	25° 03' 35.99744617" N	087° 40' 25.80676885" E

LAND DETAILS

Khata no.	Plot no.
01	16 (P)
06	17 (P)
10	18 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1413/M, dated 20.12.2024.
2	CO	:	The CO, Taljhari vide letter no. 333, dated 20.06.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1431/M, dated 20.12.2024 certified that 01 LoI (6.51 Acre) exists within 500 meters radius

			from proposed project site and total area is 13.26 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 1144, dated 29.06.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2375, dated 26.09.2024 certified that the distance of notified forest is 267 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. no.39, Page no. 169).
7	Gram Sabha	:	Gram Sabha conducted on 13.09.2019.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 74, dated 11.01.2025.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 205/M, dated 07.02.2025 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
10	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OpenMechanized Method	
2	Quarry Area	:	2.123 Ha	Life of Mine – 5year
3	Waste Generation	:	67340cum	
4	Stripping Ratio	:	33:50	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	245 m–180 m AMSL	
8	Ground Level Elevation	:	180 AMSL	
9	Ultimate Working Depth	:	38 m AMSL	
10	Water Table	:	Post Monsoon –312m AMSL Pre Monsoon – 307m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	83.16 kg Nitro mix explosives/day	
13	Diesel/Fuel requirement	:	HSD – 343liters / day (102.9 KL /year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION							
Year	Volume of Stone (cum)	T.F	tonnes	Tonnes	Tonnes	Cum	Production per day cum (O.B.)
1st	58630	2.8	164164	195	547	24700	82
2nd	69420	2.8	194376	231	648	11570	39
3rd	95030	2.8	266084	317	887	15860	53
4th	65520	2.8	183456	218	612	11700	39
5th	79040	2.8	221312	263	738	3510	12
Total	367640		**1029392**	**317(max)**	**887(Max)**	**67340**	**224**

Land Use pattern

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (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 Activities	0.000	2.123	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.000	Plantation -
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.041	
6	Settling Tank	0.000	0.020	-

7	Safety Zone	0.000	0.566	Plantation
8	Stone Stock yards	0.000	0.000	
9	Unutilized	2.730	0.000	
Total		2.730	2.730	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.566 Ha	906
2	Along Approach Road		305m	404
TOTAL				**151**

- 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.

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. 800 per Tanker)	--	**3,30,000**
2	plantation 404 X 800 = Rs 323200 (Gabion Plantation along approach road) 906 X 400 = 3,62,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	**6,85,600**	**68,560**
3	Fencing	**90,000**	-

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		**7,75,600**	**6,01,780**

Environment Monitoring Programmed

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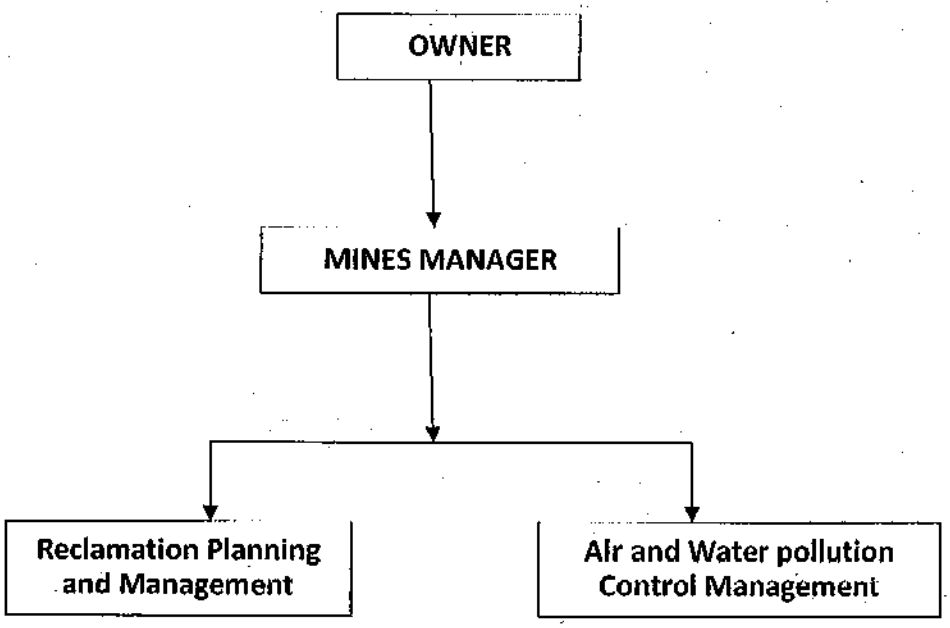
4.	Soil	3 Station	6 Monthly

Note: Monitoring period March 2025 to May 2025

Solid Waste Management

67340 cum 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

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- 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.
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- Sewage from rest shelter would be treated in Septic Tank soak pit.

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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.

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- 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 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.
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Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby 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, injuryor 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 information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 08, 09, 10, 11 & 12.03.2025, 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.

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5. Chuwa Stone Deposit - II of M/s Mahaveer Engicons Pvt. Ltd., Village : Chuwa, Thana : Jirwabari, Distt. : Sahibganj, Jharkhand (2.833 Ha).

(Proposal no.: SIA/JH/MIN/ 523739 /2025)

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

This is a new project which has been taken for appraisal on 10.03.2025.

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: 89452Cum. / annum or 241520 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chuwa Stone Deposit-II	
2	Lessee:	:	M/s Mahaveer Engicons Pvt. Ltd. Director: Sri Pranay Kumar Sahu & Sri Shobhit Raj Sahu	
3	Lessee Address	:	Applicant M/s Mahaveer Engicons Pvt. Ltd. Director: Sri Pranay Kumar Sahu & Sri Shobhit Raj Sahu Mauza: Demba, Block: Borio, Sahibganj	
4	Lease Area	:	2.833 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 119.06 Lakhs	Recurring Cost: Rs. 10.75Lakhs
7	EMP Budget	:	Capital Cost: Rs. 9.208 Lakhs	Recurring Cost: Rs. 5.853 Lakhs
8	New or	:	New	

	Expansion			
9	Mineable Reserves	:	cum.: 6,61,921cum	Tonnes: 17,87,187tons
10	Mine Life	:	8 years.	
11	Man power	:	17Person	
12	Water Requirement	:	6.4 KLD (Drinking: 0.255 KLD, Dust Suppression: 1.684KLD, Plantation: 4.47KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	60 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Ganga river at 5 km Notrh direction.	
17	Nearest Habitation	:	Jhagruchauki Village – 4.14 Km in NEDirection	
18	Nearest Rail Station	:	Karamtola Railway Station at aerial distance of 4.6 km in NW direction.	
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 122.39 km SW direction	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Sahibganj. letter no.- 1479 Dated- 31/07/2017	
21	Road & Highways	:	The distance of Approach Road is 0.421 Km. The NH-33 Sahibganj-Bhagalpur road is 3.7 Km away from the applied lease area in northem side.	

CO-ORDINATES

Point Name	Longitude	Latitude
1	Latitude 25° 12' 52.62" N to 25° 13' 4.28" N	
2	Longitude 87° 34' 25.893" E to 87° 34' 31.694" E	

LAND DETAILS

Khata no.	Plot no.
04	3 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 758/M, dated 14.08.2024.
2	CO	:	The CO, Mandro vide memo no. 211 (Mu)/Ra., dated 14.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.

3	DMO	:	DMO, Sahibganj vide memo no. 1315/M, dated 06.12.2024 certified that 02 other mining lease area (9.00 Acre & 7.25 Acre) exists within 500 meters radius from proposed project site and total area is 23.25 Acre.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 3274, dated 17.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide memo no. 1479, dated 31.07.2017 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 Sahibganj District (Sl. no. 6, Page no. 155).
7	Gram Sabha	:	Gram Sabha conducted on 26.11.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 1415, dated 20.12.2024.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 274/M, dated 13.02.2025 certified that the proposed project site is not under the Redzone Grid 1, 3, 4 & 7.
10	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	:	2.833 Ha	Life of Mine – 8year
3	Waste Generation	:	57454cum	
4	Stripping Ratio	:	03:10	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	251m–235m AMSL	
8	Ground Level Elevation	:	230 AMSL	
9	Ultimate Working Depth	:	48 m AMSL	
10	Water Table	:	Post Monsoon – 185m AMSL Pre Monsoon – 180 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive	:	85.04 kg Slurry explosives/day	

	Requirement		
13	Diesel/Fuel requirement	:	HSD – 246 liters / day (73.8KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	87724	2.7	236855	292	789	27301	91
2nd	88232	2.7	238227	294	794	16093	53
3rd	88639	2.7	239325	295	797	4665	15
4th	89045	2.7	240423	296	801	4687	15
5th	89452	2.7	241520	298	805	4708	15
Total	**443092**		**1196349**	**298 (max)**	**805 (max)**	**57454**	**91 (max)**

Land Use pattern

SL	Pattern of Utilization	Existing Land Use (Ha)	At the end of plan period (Ha)	Conceptual period (Ha)
1	Quarry	0.166	1.445	2.250 (0.261ha area shall be backfilled, 1.244ha area shall be left as water reservoir and 0.745ha left as dead benches).
2	Waste Dump	Nil	0.463	Nil (waste dump to be removed and backfilled)
3	Road	0.029	0.029	0.000
4	Safety Zone Plantation	Nil	0.583	0.583
5	Total	0.195	2.520	2.833
6	Unused Area	2.638	0.313	0.000
	Total Lease Area	**2.833**	**2.833**	**2.833**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone/ Dumping/ Offices/ Store etc.		0.583 Ha	932
2	Along Approach Road		421m	560
TOTAL				**1,492**

- 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.

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	Plantation 560 X 800 = Rs 4,48,000 (Gabion Plantation along approach road) 932 X 400 = 3,72,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	8,20,800	82,080
3	Fencing	100,000	--
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**	--	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022		
Total		**9,20,800**	**5,85,300**

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

Note: Monitoring period Dec 2024 to Feb 2025

Solid Waste Management

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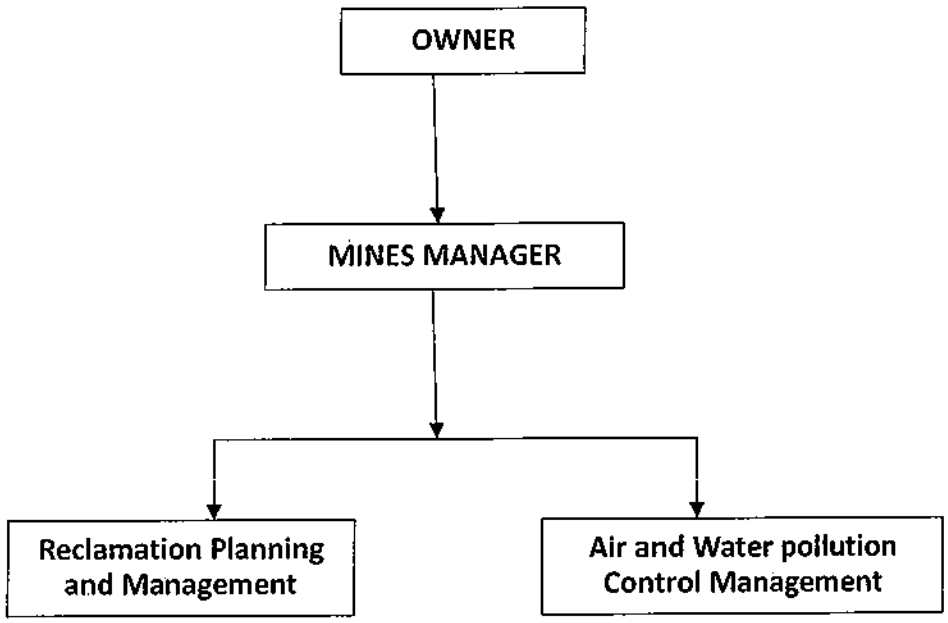
Organization Structure



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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 08, 09, 10, 11 & 12.03.2025, 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.

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6. **Demba Stone Mine of M/s Mahaveer Engicons Pvt. Ltd. (Director : Shri Rajkumar Pandey), Village : Demba, Thana : Jirwabari, Distt. : Sahibganj, Jharkhand (4.84 Ha).**

(Proposal no.: SIA/JH/MIN/ 526174 /2025)

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

Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/257, dated 16.10.2017.

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 09.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 490/M, dated 26.06.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2302, dated 18.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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.

ToR Application for: Proposed Capacity- 45000 cum/annum or 135000 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Demba Stone Mine	
2	Lessee:	:	Proponent: M/S Mahaveer Engicons Pvt. Ltd. Director. - Shri Rajkumar Pandey	
3	Lease Address	:	Village : Demba, Thana : Jirwabari, Distt. : Sahibganj, Jharkhand.	
4	Lease Area	:	4.84 ha.	11.95 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 113.04 Lakhs	
7	EMP Budget	:	Capital: Rs. 7.49 Lakhs	Recurring: 5.73 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	5613171tons	
10	Mine Life	:	Upto the lease period i.e. 18.01.2018 to 17.01.2028.	
11	Man power	:	40	
12	Water Requirement	:	5.84 KLD (Drinking: 0.600 KLD, Dust Suppression: 0.64 KLD, Plantation: 4.60 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	20 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Ganga River – 7.60 Km in NE direction (aerial distance).	
17	Nearest Habitation	:	Demba Village –1.51km East direction.	
18	Nearest Railway Station	:	Karamtola Railway Station at 3.50 km (aerial distance) NW direction	
19	Nearest Air Port	:	Deoghar Airport 123.60 Km (arial distance) at SW direction.	
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 1762 Dated: 12/09/2017	
21	Road & Highways	:	NH-33 at 2.22 km (aerial distance) in North-East direction	

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary

(GPS Co-ordinates)

Point No.	Latitude	longitude
1	25° 13' 46.263" N	87° 34' 24.294" E
2	25° 13' 46.147" N	87° 34' 26.322" E
3	25° 13' 45.944" N	87° 34' 28.193" E
4	25° 13' 46.736" N	87° 34' 28.737" E
5	25° 13' 47.144" N	87° 34' 27.532" E
6	25° 13' 48.407" N	87° 34' 28.258" E
7	25° 13' 49.611" N	87° 34' 29.014" E
8	25° 13' 49.681"N	87° 34' 28.823" E
9	25° 13' 51.709" N	87° 34' 29.126" E
10	25° 13' 53.270" N	87° 34' 29.592" E
11	25° 13' 53.542" N	87° 34' 31.037" E
12	25° 13' 53.638" N	87° 34' 32.640" E
13	25° 13' 51.913" N	87° 34' 32.548" E
14	25° 13' 50.575" N	87° 34' 32.476" E
15	25° 13' 49.420" N	87° 34' 32.414" E
16	25° 13' 47.603" N	87° 34' 32.213" E
17	25° 13' 47.015" N	87° 34' 31.807" E
18	25° 13' 46.832" N	87° 34' 33.822" E
19	25° 13' 46.571"N	87° 34' 35.067" E
20	25° 13' 45.258" N	87° 34' 34.096" E
21	25° 13' 44.331"N	87° 34' 33.370" E
22	25° 13' 44.324" N	87° 34' 32.789" E
23	25° 13' 43.627" N	87° 34' 32.315" E
24	25° 13' 42.842" N	87° 34' 31.381" E
25	25° 13' 42.819" N	87° 34' 29.802" E
26	25° 13' 42.795" N	87° 34' 28.236" E
27	25° 13' 41.991"N	87° 34' 27.694" E
28	25° 13' 43.007" N	87° 34' 26.421" E
29	25° 13' 43.952" N	87° 34' 25.412" E
30	25° 13' 45.006" N	87° 34' 24.691"

LAND DETAILS

Khata no.	Plot no.
18 / K	209 (P)
19	198 (P) & 207 (P)
32	208 (P)
36	206
37	197 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 18.01.2018 to 17.01.2028.
2	CO	:	The CO, Mandro vide memo no. 602/Ra., dated 06.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 399/M, dated 04.03.2025 certified that 06 other mining lease area (7.29 Acre, 11.50 Acre, 10.00 Acre, 9.90 Acre, 11.25 Acre & 10.50 Acre) exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 3273, dated 17.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 1430, dated 15.10.2016 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. 07, Page no. 213).
7	Gram Sabha	:	Gram Sabha conducted on 07.06.2024.
8	Scheme / Mine Plan Approval	:	i. Mining plan approved by DDM, Santhal Pargana Circle, Dumka vide letter no. 348/DDM, dated 31.07.2017. ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide letter no. 651/G, dated 19.08.2021. iii. Mining plan approved by DMO, Sahibganj vide letter no. 721, dated 03.08.2024.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/257, dated 16.10.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2302, dated 18.12.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2234131 /2018/597, dated 01.06.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-14705600 /2023/634, dated 31.03.2023.

13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 490/M, dated 26.06.2024
14	Grid certificate	:	DMO, Sahibganj vide memo no. 272/M, dated 13.02.2025 certified that the proposed project site is not under Redzone Grid 1, 3, 4 & 7.
15	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	:	Mechanized Method	
2	Quarry Area	:	4.84 Ha	Life of Mine – Upto the lease period i.e. 18.01.2018 to 17.01.2028.
3	Waste Generation	:	84982 cum	
4	Stripping Ratio	:	1:4	
5	Working Days	:	300	
6	Benches: size	:	3 m x 3 m,	
7	Elevation of Mine	:	144 m AMSL	
8	Ground Level Elevation	:	120 m AMSL	
9	Ultimate Working Depth	:	90 m AMSL	
10	Water Table	:	Post Monsoon – 75 m AMSL Pre Monsoon – 72 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	480 Kg/day slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 287 liters / day (86.1 KL/year)	

Production Details

Years	Production of Stone in Tones/Year	Tonnage Factor(t/m3)	Production of O.B in Cum /Year
6th	420017	2.7	38224
7th	420028	2.7	46758
8th	420012	2.7	0

9th	420001	2.7	0
10th	420088	2.7	0
Total	2100146		84982

Land Use

Sl. No.	Pattern	Existing Land Use (Ha)	At the Conceptual period (In Ha)	At ultimate stage (in Ha)
1	Quarry	2.941	3.785	Water (0.568) 11.74 %
2	Safety barrier zone /green belt	0.890	0.890	2.404 (49.66 %)
3	Dump	0.600	0.040	Comes under excavation
4	Office etc.	0.010	0.00	Comes under excavation
5	Balanced area	0.349	0.125	1.868(38.60%)
	TOTAL	**4.840**	**4.840**	**4.840**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.894 Ha	1430
2	Along Approach Road		0.160 km	106
TOTAL				**1,536 Trees**

- 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.

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

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
2	Plantation 106 X 800 = Rs 84,800 (Gabion Plantation along approach road) 1536 X 400 = 6,14,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,99,200	69,920
3	Fencing	50,000	
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		7,49,200	5,73,140

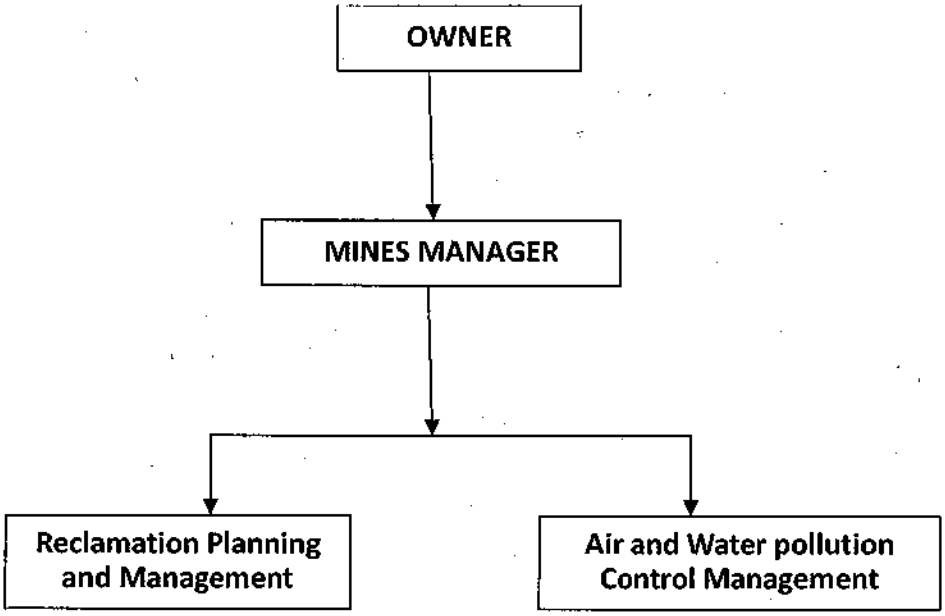
Environment Monitoring Programme:

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

84982 cum. 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 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 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 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 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, thereby 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, injuryor 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 08, 09, 10, 11 & 12.03.2025, 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. 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.

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7. **Saharpur Stone Mine of Md. Kalim Ansari and Md. Wahid Alam, Village : Saharpur, Thana : Shikaripara (No. 12), Distt. : Dumka, Jharkhand (1.88 Ha).**

(Proposal no.: SIA/JH/MIN/ 523562 /2025)

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

This is a new project which has been taken for appraisal on 10.03.2025.

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: 20919 Cum. (Max.) / 56481Tons (max.) per year

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Saharpur Stone Mine	
2	Lessee:	:	(1) Md. Kalim Ansari (2) Md. Wahid Alam	
3	Lessee Address	:	1) Kalim Ansari, S/o- Hasil Miyan, Vill- Thakarpur, P.O- Kolha, Thana- Kathikund, Dist- Dumka, State- Jharkhand 2) Md. Wahid Alam, S/o- Late Md. Motiur Rahman, Vill- Dr. D.N. Shah, Salempur, Suturkhana Post- Bank, Thana- Mufasil Munger, Dist- Munger, State- Bihar.	
4	Lease Area	:	1.88 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 162.80 Lakhs	Recurring Cost: Rs. 4.16 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 11.37 Lakhs	Recurring Cost: Rs. 6.06 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	20919 Cum	56481Tons
10	Mine Life	:	5 years	
11	Man power	:	24Person	
12	Water Requirement	:	8.50 KLD Drinking: 1.952 KLD Dust Suppression: 0.720 KLD Plantation: 5.830 KLD	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	60 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water	:	Bansloi River flowing 8km NE Direction.	

	Body		
17	Nearest Habitation	:	Saharpur Village – 0.500 Km in NW Direction
18	Nearest Rail Station	:	Pakdaha Harinsing Railway Station at areal distance of 6.1 Km in North direction.
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 92.4km North direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer Dumka. letter no.-1874 Dated- 14/08/2024.
21	Road & Highways	:	The distance of Approach Road is 68m, after that this road connects to village road. The village road continues for 3.2 km and after this the road connects to NH 39.

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 11' 09.36571077" N	087° 34' 21.45307636" E
2	24° 11' 09.16346183" N	087° 34' 21.67473903" E
3	24° 11' 08.83155653" N	087° 34' 22.14113183" E
4	24° 11' 08.60396341" N	087° 34' 22.48727228" E
5	24° 11' 08.37285080" N	087° 34' 22.97673307" E
6	24° 11' 08.34263012" N	087° 34' 23.39211116" E
7	24° 11' 08.22334413" N	087° 34' 23.86645016" E
8	24° 11' 07.99894909" N	087° 34' 24.09351076" E
9	24° 11' 07.64301802" N	087° 34' 24.24187935" E
10	24° 11' 06.60948514" N	087° 34' 24.18004752" E
11	24° 11' 06.22718785" N	087° 34' 24.53238078" E
12	24° 11' 06.18608999" N	087° 34' 24.51966450" E
13	24° 11' 06.10498787" N	087° 34' 24.74736441" E
14	24° 11' 05.89428468" N	087° 34' 25.75302088" E
15	24° 11' 05.78725070" N	087° 34' 27.05618364" E
16	24° 11' 05.70619211" N	087° 34' 27.69564477" E
17	24° 11' 05.60617015" N	087° 34' 27.83178434" E
18	24° 11' 05.42623808" N	087° 34' 28.42768914" E
19	24° 11' 05.22389667" N	087° 34' 28.88603104" E
20	24° 11' 04.60996937" N	087° 34' 29.81114829" E
21	24° 11' 04.06727456" N	087° 34' 30.84592696" E
22	24° 11' 03.46249686" N	087° 34' 31.98839441" E
23	24° 11' 02.82031596" N	087° 34' 33.26002953" E
24	24° 11' 02.31477722" N	087° 34' 34.13469585" E
25	24° 11' 02.03632638" N	087° 34' 33.22726856" E
26	24° 11' 01.76466387" N	087° 34' 32.79930310" E
27	24° 11' 02.43347204" N	087° 34' 31.99921116" E
28	24° 11' 02.98437700" N	087° 34' 31.61962379" E
29	24° 11' 03.15871208" N	087° 34' 31.31150203" E
30	24° 11' 03.02922377" N	087° 34' 31.20795343" E
31	24° 11' 03.32431535" N	087° 34' 30.18817797" E
32	24° 11' 03.58568729" N	087° 34' 29.75031615" E

33	24° 11' 04.28206841" N	087° 34' 28.78094902" E
34	24° 11' 04.52829484" N	087° 34' 28.19427501" E
35	24° 11' 04.63246498" N	087° 34' 27.70564232" E
36	24° 11' 04.67759972" N	087° 34' 27.21674515" E
37	24° 11' 05.02131136" N	087° 34' 26.87076545" E
38	24° 11' 05.26941979" N	087° 34' 26.82897230" E
39	24° 11' 05.58372358" N	087° 34' 26.97625085" E
40	24° 11' 05.70757374" N	087° 34' 25.69116717" E
41	24° 11' 05.97812620" N	087° 34' 24.43175873" E
42	24° 11' 05.61376835" N	087° 34' 24.30572632" E
43	24° 11' 05.41015659" N	087° 34' 24.19498324" E
44	24° 11' 05.24197359" N	087° 34' 24.04046542" E
45	24° 11' 04.54480641" N	087° 34' 23.22184124" E
46	24° 11' 04.26611474" N	087° 34' 22.98171006" E
47	24° 11' 04.46193221" N	087° 34' 22.48559142" E
48	24° 11' 04.98749878" N	087° 34' 22.04860684" E
49	24° 11' 03.74246450" N	087° 34' 21.56802206" E
50	24° 11' 03.97404951" N	087° 34' 20.93751796" E
51	24° 11' 03.55916493" N	087° 34' 20.74345963" E
52	24° 11' 03.62603580" N	087° 34' 20.37581884" E
53	24° 11' 03.74842366" N	087° 34' 19.98096741" E
54	24° 11' 03.97487125" N	087° 34' 19.54516410" E
55	24° 11' 04.45586399" N	087° 34' 18.73477483" E
56	24° 11' 04.91080329" N	087° 34' 18.99491007" E
57	24° 11' 05.60673580" N	087° 34' 19.47304065" E
58	24° 11' 06.44318617" N	087° 34' 20.09458268" E
59	24° 11' 06.70317519" N	087° 34' 20.62019648" E
60	24° 11' 06.67518224" N	087° 34' 21.36693808" E
61	24° 11' 06.77431592" N	087° 34' 21.79847637" E
62	24° 11' 06.90686460" N	087° 34' 22.05168484" E
63	24° 11' 06.80042488" N	087° 34' 22.89418043" E
64	24° 11' 06.68502360" N	087° 34' 23.44008565" E
65	24° 11' 07.15028359" N	087° 34' 22.96438904" E
66	24° 11' 07.26687202" N	087° 34' 22.77270130" E
67	24° 11' 07.74528373" N	087° 34' 22.81877155" E
68	24° 11' 08.04036816" N	087° 34' 22.71849347" E
69	24° 11' 08.33363546" N	087° 34' 22.43148987" E
70	24° 11' 08.46550174" N	087° 34' 22.19593624" E
71	24° 11' 09.03512587" N	087° 34' 21.42964273" E
72	24° 11' 09.16508055" N	087° 34' 21.30484522" E

LAND DETAILS

Khata no.	Plot no.
19, 26, 07, 16 & 18	136, 138 (P), 139, 140, 146 (P), 147, 148, 149 & 150

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 1045/M, dated 12.09.2024.
2	CO	:	The CO, Shikaripara vide letter no. 780/Ra., dated 30.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 991/M, dated 24.08.2024 certified that 04 other mining lease area (2.81 Acre, 6.73 Acre, 7.34 Acre & 4.62 Acre) exists within 500 meters radius from proposed project site and total area is 26.16 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1801, dated 13.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 1874, dated 14.08.2024 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 Dumka District (Sl. no. G3, Page no. 161).
7	Gram Sabha	:	Gram Sabha conducted on 01.01.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 210/M, dated 27.01.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay 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	:	1.88 Ha	Life of Mine – 5 year
3	Waste Generation	:	15004 cum	
4	Stripping Ratio	:	1:0.05	
5	Working Days	:	300	
6	Benches: size	:	5 m x 5.5 m,	
7	Elevation of Mine	:	171 m to 165 m	
8	Ground Level	:	165 m RL	

	Elevation		
9	Ultimate Working Depth	:	26 m
10	Water Table	:	Post Monsoon – 138 m RL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	21.38 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 231.72 liters / day (69.51 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum recoverable 95%	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	19262	2.7	52008	64	173	8584	29
2nd	20919	2.7	56481	70	188	6420	21
3rd	17434	2.7	47073	58	157	0	0
4th	19543	2.7	52767	65	176	0	0
5th	11628	2.7	31396	39	105	0	0
Total	**88787**		**20919**	**70(MAX)**	**188(MAX)**	**15004**	**50**

Land Use

EXISTING, PROPOSED & CONCEPTUAL LAND USE

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (acres)	Land used at the conceptual stage in end of mine life (in Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	0.712	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.081	Plantation -

4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.059	-
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.057	Green Belt
8	Safety Zone	0.000	0.924	Plantation
9	Pre mined area	0.074	0.074	
10	Unutilized	0.000	0.000	
11	Crusher	0.000	0.000	
Total		**1.88**	**1.88**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone And Plantation		1.01Ha	1616
2	Along Approach Road		488 m	326
TOTAL				**1942**

- 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.

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	Plantation 326 X 800 = Rs 2,60,800 (Gabion Plantation along approach road) 1942 X 400 = 7,76,800 (Plantation within lease area)	10,37,600	1,03,760

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	(also includes Fertilizer, Pesticides, Maintenance)		
3	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** *Source: CPCB Notification, New Delhi 23 Feb 2022*	--	2,03,220
4	**Fenceing**	100000	
Total		**11,37,600**	**6,06,980**

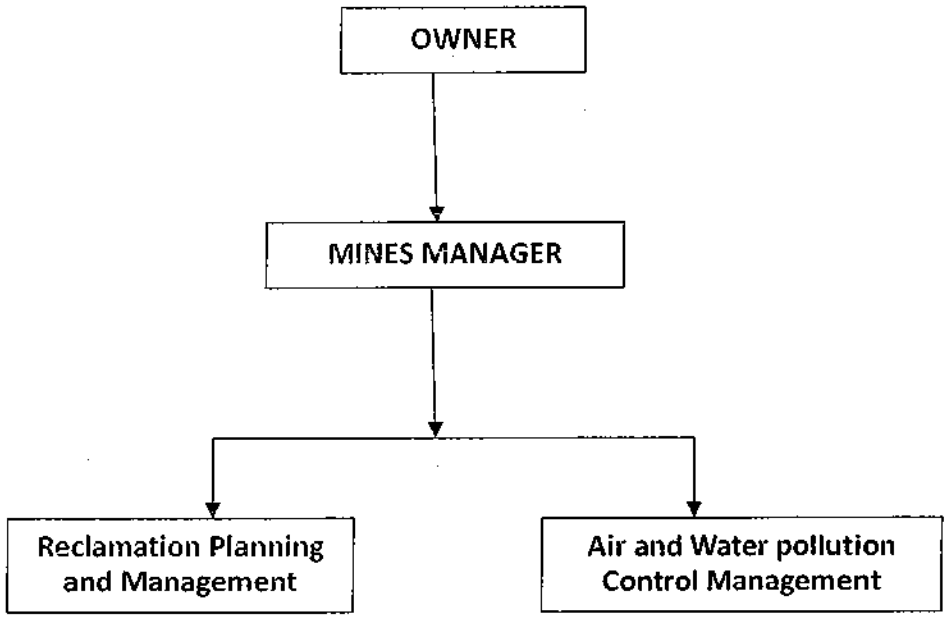
Environment Monitoring Programme

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

Solid Waste Management

During first& secondyear15004cum. 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 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 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 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 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, thereby 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, injuryor 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 08, 09, 10, 11 & 12.03.2025, 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.

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8. **Salbonapahar Stone Mine of Shri Sanjay Prasad Singh, Village : Salbonapahar, Thana : Shikaripara, Distt. : Dumka, Jharkhand (0.83 Ha).**
(Proposal no.: SIA/JH/MIN/ 517922 /2025)

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

This is a new project which has been taken for appraisal on 10.03.2025.

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: 13,562Cum. / annum or 36,618 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Salbonapahar Stone Mine	
2	Lessee:	:	Shri Sanjay Prasad Singh	
3	Lessee Address	:	Shri Sanjay Prasad Singh S/o Shri Rajnandan Singh Village - R/o Goshala Road 2nd Floor, Near Karbala, P.O + Thana + Dist. – Dumka.	
4	Lease Area	:	0.83 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 101.65 Lakhs	Recurring Cost: Rs. 6.72 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 3.65 Lakhs	Recurring Cost: Rs. 5.33Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 47586 cum	Tonnes: 128483 tons
10	Mine Life	:	5 years.	
11	Man power	:	35Person	
12	Water Requirement	:	2.8 KLD (Drinking: 0.375 KLD, Dust Suppression: 0.4KLD, Plantation: 2.010KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Brahmani river at 7.87 km North direction.	
17	Nearest Habitation	:	Salbonapahar Village –1.0 Km	

18	Nearest Rail Station	:	Pakdaha Harinsing Railway Station at aerial distance of 6.72 km in NE direction.
19	Nearest Air Port	:	Deoghar Airport (Deoghar) is at aerial distance of 6.72 km NW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer, Dumka. letter no.- 1789 Dated- 05.08.2024
21	Road & Highways	:	Approach Road is 100 m & NH-114A (MDR Sarasdangal to Shikaripara.), at 4.74 km at NE Direction.

CO-ORDINATES

Point	Latitude	Longitude
1	24° 10' 44.61675494" N	087° 33' 46.57503280" E
2	24° 10' 44.89700102" N	087° 33' 46.87224349" E
3	24° 10' 45.32081305" N	087° 33' 46.38555505" E
4	24° 10' 45.64387684" N	087° 33' 46.60450094" E
5	24° 10' 46.01874278" N	087° 33' 46.96988240" E
6	24° 10' 45.90945707" N	087° 33' 47.32957369" E
7	24° 10' 45.74616907" N	087° 33' 48.13834961" E
8	24° 10' 46.11438310" N	087° 33' 48.24965783" E
9	24° 10' 46.47208268" N	087° 33' 48.33795470" E
10	24° 10' 46.94869212" N	087° 33' 48.54316989" E
11	24° 10' 47.27495263" N	087° 33' 48.64045821" E
12	24° 10' 47.66578836" N	087° 33' 48.82703915" E
13	24° 10' 47.58736034" N	087° 33' 49.08687447" E
14	24° 10' 47.54454170" N	087° 33' 49.34230157" E
15	24° 10' 47.93145139" N	087° 33' 49.45811527" E
16	24° 10' 48.26230098" N	087° 33' 49.49337104" E
17	24° 10' 48.01014844" N	087° 33' 50.07751906" E
18	24° 10' 47.75799527" N	087° 33' 50.66166643" E
19	24° 10' 46.87246861" N	087° 33' 50.40674879" E
20	24° 10' 45.98694179" N	087° 33' 50.15183216" E
21	24° 10' 45.38722312" N	087° 33' 49.97919173" E
22	24° 10' 44.98960284" N	087° 33' 50.02851778" E
23	24° 10' 44.95056711" N	087° 33' 49.98326935" E
24	24° 10' 44.94026271" N	087° 33' 49.87805767" E
25	24° 10' 44.70271760" N	087° 33' 49.60825406" E
26	24° 10' 44.49373140" N	087° 33' 49.41334353" E
27	24° 10' 44.59500447" N	087° 33' 49.20382014" E
28	24° 10' 44.29667897" N	087° 33' 48.91266243" E
29	24° 10' 44.10575319" N	087° 33' 48.70295135" E
30	24° 10' 43.44599212" N	087° 33' 48.23523228" E
31	24° 10' 43.85076980" N	087° 33' 47.58799163" E
32	24° 10' 44.26854008" N	087° 33' 46.96576910" E

LAND DETAILS

Khata no.	Plot no.
21	231
30	228 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 1162/M, dated 14.10.2024.
2	CO	:	The CO, Shikaripara vide letter no. 893/Ra., dated 08.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 1296/M, dated 25.11.2024 certified that 05 other mining lease area (3.80 Acre, 5.10 Acre, 5.79 Acre, 3.52 Acre & 5.80 Acre) exists within 500 meters radius from proposed project site and total area is 26.06 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1797, dated 13.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 1789, dated 05.08.2024 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 Dumka District (Sl. no. 08, Page no. 332).
7	Gram Sabha	:	Gram Sabha conducted on 19.12.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 1347/M, dated 11.12.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	0.83 Ha	Life of Mine – 5year
3	Waste Generation	:	10835cum	

4	Stripping Ratio	:	01:10
5	Working Days	:	300
6	Benches: size	:	6 m x 6 m
7	Elevation of Mine	:	246m–237m AMSL
8	Ground Level Elevation	:	237 AMSL
9	Ultimate Working Depth	:	220 m AMSL
10	Water Table	:	Post Monsoon – 207m AMSL Pre Monsoon – 205m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	15.8kg Nitro mix explosives/day
13	Diesel/Fuel requirement	:	HSD – 246 liters / day (73.8 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	7471	2.7	20171	25	67	7160	24
2nd	6284	2.7	16967	21	57	3675	12
3rd	10959	2.7	29590	37	99	0	0
4th	9310	2.7	25137	31	84	0	0
5th	13562	2.7	36618	45	122	0	0
Total	**47586**		**128483**	**45 (max)**	**122 (max)**	**10835**	**24 (max)**

Land Use pattern

SL	Pattern of Utilization	Present/Existing land use pattern in (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 Activities	0.000	0.514	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.000	Plantation
4	Mining Road	0.000	0.000	Plantation
5	Garland drain	0.000	0.021	-
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.000	Green Belt

8	Safety Zone	0.000	0.295	Plantation
9	Stone Stock yards	0.000	0.000	-
10	Unutilized	0.830	0.000	-
11	Crusher	0.000	0.000	-
	Total Lease Area	**0.830**	**0.830**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Green Belt/Safety Zone		0.295 Ha	472
2	Along Approach Road		100m	132
TOTAL				**670**

- 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.

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	Plantation 132 X 800 = Rs 10,5600 (Gabion Plantation along approach road) 472 X 400 = 188,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	2,94,400	29,440
3	Fencing	70,000	-
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)**	--	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	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		
Total		**3,64,400**	**5,32,660**

Environment Monitoring Programmed

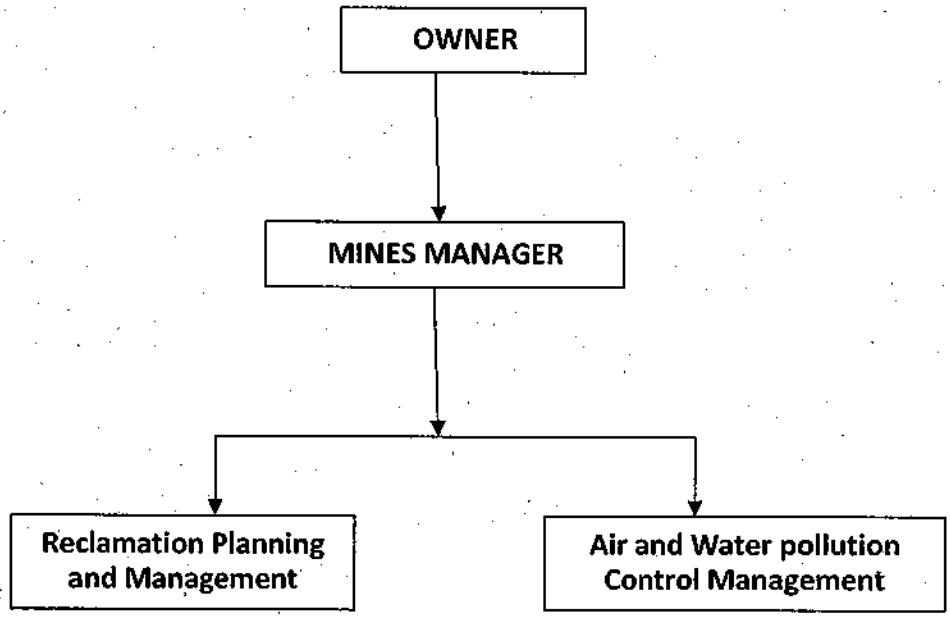
SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Note: Monitoring period March 2025 to May 2025

Solid Waste Management

10835cum. 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 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 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 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 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, thereby requiring immediate cessation of the unsafe activity or operation.
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Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
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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
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Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
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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 08, 09, 10, 11 & 12.03.2025, 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.

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9. **Kiro Kuriya Stone Mine of M/s Maa Sheetla Stone Works (Prop. : Shri Sanjay Kumar Yadav) , Village : Kiro Kuriya, Thana : Taljhari, Thana no. : 15 Distt. : Sahibganj, Jharkhand (2.93 Ha).**

(Proposal no.: SIA/JH/MIN/ 525852 /2025) (New EC)

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 10.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 1,09,955 Cum Per Annum/366.51 Cum Per Day or 2,96,878.50 Ton Per Annum/ 989.59 Ton per Day.

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Kiro Kuriya Stone Mine of M/s Maa Shitla Stone Works	
2	Proprietor	:	Shri Sanjay Kumar Yadav	
3	Lessee Address	:	R/O- At Rampur Karara, Post-Sakrigali Ghat, Thana-Sahibganj (MU), District-Sahibganj, Jharkhand	
4	Lease Area	:	Acres: 7.25	Ha:2.936
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	45.00 Lakhs	
7	EMP Budget	:	Capital: 46.15Lakhs	Recurring: 7.5Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	10,60,099.00 Cum	2,86,2267.30 Tonnes
10	Mine Life	:	10 Years	

11	Man power	:	25 persons
12	Water Requirement	:	Total water requirement is about 20.75 KLD=0.75 KLD (Drinking & Domestic Uses) + 10.0 (Plantation) KLD + 10.0 KLD (Dust Suppression).
13	Water Source	:	The drinking water will be available from nearby village by tractor tank manually by labors at the site.
14	DG Set / power	:	125 KVA (Temporary setup for Backup)
15	Crusher	:	No
16	Nearest Water Body	:	Jamni Village Pond is about 0.72km in NW direction.
17	Nearest Habitation	:	Korokuriya is about 0.65 km in SE direction.
18	Nearest Rail Station	:	Sakrigal Railway station is about 1.72 km in N direction.
19	Nearest Airport	:	DeogharAirport is about 131.51 km in SW direction.
20	Nearest Forest	:	Baraparte PF — 0.35 — WSW Phuljhari PF — 1.64 — SSW
21	Road & Highways	:	NH- 33 is about 1.74 km in NW direction.

CO-ORDINATES

PILLARS	LATITUDE	LONGITUDE
1	25°13'34.050"N	87°42'39.272"E
2	25°13'34.586"N	87°42'37.960"E
3	25°13'35.045"N	87°42'36.520"E
4	25°13'35.566"N	87°42'34.951"E
5	25°13'34.059"N	87°42'33.512"E
6	25°13'32.865"N	87°42'32.244"E
7	25°13'31.850"N	87°42'30.986"E
8	25°13'30.737"N	87°42'29.674"E
9	25°13'29.647"N	87°42'32.259"E
10	25°13'28.767"N	87°42'34.391"E
11	25°13'28.635"N	87°42'36.228"E
12	25°13'30.260" N	87°42'36.934"E
13	25°13'31.575"N	87°42'37.476"E
14	25°13'32.864"N	87°42'38.303"E

LAND DETAILS

Khata no.	Plot no.
14	37 (P)
04	38
07	39

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1108/M, dated 09.10.2024.
2	CO	:	The CO, Taljhari vide letter no. 566/Ra., dated 09.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1427/M, dated 20.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2275, dated 18.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2274, dated 18.09.2024 certified that the distance of reserved / protected forest is 255 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. no. 32, Page no. 166).
7	Gram Sabha	:	Gram Sabha conducted on 05.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 164, dated 05.02.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 1427/M, dated 20.12.2024 certified that the proposed project site is not under of Redzone Grid 1,3,4 & 7.
10	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 &Semi Mechanised	
2	Lease Area	:	7.25 ACRES / 2.93 HA	Life of Mine – 10 years
3	Waste Generation	:	5 years–1,53,559 Cum	
4	Stripping Ratio(t/m^3)	:	1:0.12	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease	:	144 AMSL	

	Area		
8	Lowest Elevation of lease Area		87AMSL
9	Ultimate Working Depth	:	63 above AMSL
10	Water Table	:	35 above AMSL (50BGL)
11	Topography of Mine	:	Hillocks area
12	Explosive Requirement	:	247.47 kg
13	Diesel/Fuel requirement	:	596 Litres per day

PRODUCTION DETAILS

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	78682.00	71164.00	192142.80	Construction & Road
2nd	22007.00	90846.00	245284.20	Construction & Road
3rd	16233.00	106098.00	286464.60	Construction & Road
4th	20321.00	109955.00	296878.50	Construction & Road
5th	16316.00	103341.00	279020.70	Construction & Road
Total	**153559.00**	**481404.00**	**1299790.80**	
Maximum production proposed in- 109955Cum/296878.50Ton				
Stripping Ration in (t/m3)- 1:0.12				

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	1.99	2.41(0.30 ha reclaimed and used for planation, 2.11ha area converted into water reservoir)
Haul Road	0.00	0.02	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.52	0.52
Dump with Parapet wall & Garland drain	0.00	0.40	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	2.93	2.93
Balance unused area	2.93	0.00	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	**2.93**	**2.93**	**2.93**

ENVIRONMENT MANAGEMENT

Green Belt Development

The plantation will be done under the Campaign "Ek Ped Ma Ke Naam". Total number of saplings to be planted in the entire plan period will be 4688 saplings. Green Belt area will be developed along the periphery of mining lease area and haulage route, in consultation with local Authority (Plantation density considered is 832 plants on 0.52 Ha area or 2.5m X 2.5m grid pattern).

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	832	5200	0.52	Pipal Bargad Palash Fruit Bearing Trees Mango, Jackfruit, Guava, Jamun
	Haul Road	2.0 x 2.0	1332	1.0 KM Approach Rd. Two row both side 1000/3=333 333*4 = 1332 Plants		
	Reclaimed Area	2.5 x 2.5	480	-	0.30	
2nd	Care &Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			**2644**	**5200**	**0.82**	

- 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**	**Criteria Pollutants**	**Capital Cost (In Lakh)**	**Recurring cost (In Lakh)**	**Implementation Responsibility**	**Frequency and Method**
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	Dust (PM 10 & PM 2.5)	24.0	2.4	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book

	One Water Tanker					
	Solid waste management	Municipal Solid by workers	1.0	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 2644 x 500Rs.	No2,So2 & CO reduction Noise reduction	21.15	4.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Deviation in Baseline	Nil	1.0	Out source to NABL Accredited Lab-Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		**46.15**	**7.5**		

Environment Monitoring Cell

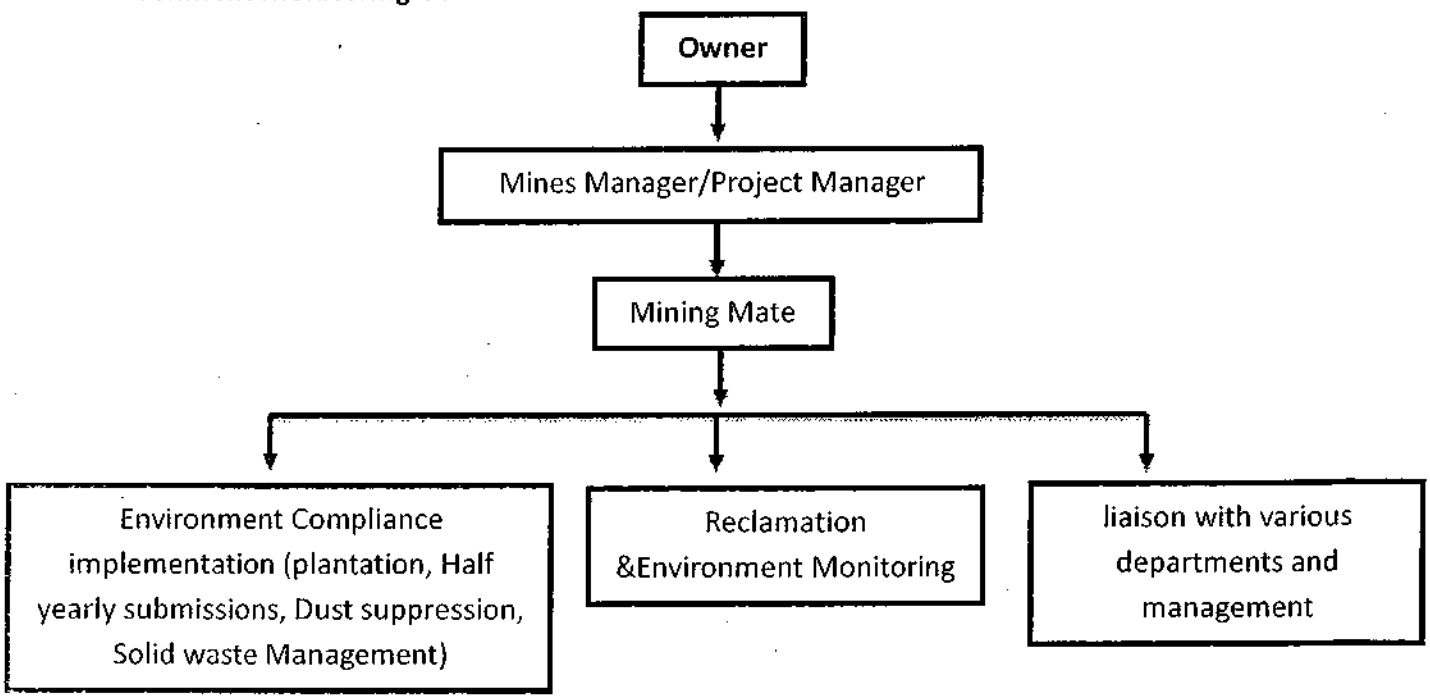

Fig: Organization Chart for Environment Management Cell

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.

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.	2 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

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.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed 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.

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 adversegeological faulting or poor work methods. Those at greatest risk will be

workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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)

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Drilling is common to the mining of stones. The main hazards linked to the drillingoperations 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 orabandoned bench, the risk of minerals or materials falling onto workers at the foot of theface should not be overlooked. A face and bench are a necessary part of a working quarryand 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 atrisk during the drilling operation is the driller. Others such as the manager of the mine ormaintenance personnel, may approach the bench edge during the drilling operation in theevent 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 drillingoperation; part of the training includes instructions to always face towards the openedge 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 thebench
- Provision to attach a safety line to the drilling rig and provide a harness for thedriller to wear.
- Restricted access to the area to all persons except those necessary for the drillingoperation.

  Dust generation during drilling

  The hazard is the inhalation of dust which is created during the drilling operation. Properlyapplied 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 ofwater), exhaust/ vacuum system will be provided which removes the dust from thedrill hole continuously and discharges the same in a dust collector speciallyprovided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposalarrangement.
- Deep wetting of drilling zones will be done by water sprinkling before startingdrilling.

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 willbe assessed. Unless control measures are in place no-one, except those necessary for thework in hand, will be allowed inside the designated noisy area. In most cases this will bethe drill operator.

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

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due toovercharging 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 dustalso 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 vibrationsdo not damage the structures/houses if the quarrying operations are close to humanhabitation.
- Blasting shall be conducted only during favourable weather conditions and onlyduring the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be givenin 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

largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 avoidsuspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (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.

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 Kiro Kuriya Stone Mine of M/s Maa Sheetla Stone Works (Prop. : Shri Sanjay Kumar Yadav) , Village : Kiro Kuriya, Thana : Taljhari, Thana no. : 15 Distt. : Sahibganj, Jharkhand (2.93 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

10. **Demba Stone Deposit of M/s Sone Ganga Stones Private Limited, Village : Demba, Sub-Division : Rajmahal, Distt. : Sahibganj, Jharkhand (4.05 Ha).**

(Proposal no.: SIA/JH/MIN/ 510225 /2025)

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

Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/212, dated 08.08.2017.

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 09.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ · 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. 1241/M, dated 16.11.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 92, dated 22.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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.

ToR Application for: Proposed Capacity: 250212 Ton Per Annum or 92,671 Cum Per Annum or 778.08 Tonner Per Day.

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Demba Stone Mine M/s Sone Ganga Stones Pvt. Ltd.	
2	Lessee/Director	:	Shri Shobhit Mishra	
3	Lessee Address	:	OBRA Pharmacy, Chopan Road, Ward No.-04,Dist-Sonbhadra, U.P-231219	
4	Lease Area	:	4.05 Ha.	Acres: 10.0 Acres
5	Type of Land	:	Non-forest Land	
6	Project Cost	:	61 Lakhs	
7	EMP Budget	:	Capital: 30.78 Lakhs	Recurring: 10.16 Lakhs per year
8	New or Expansion	:	DEIAA TO SEIAA (Re-Appraisal of DEIAA EC)	
9	Mineable Reserves	:	745156 Cum	2011920 Tonnes.
10	Lease Period	:	Upto the lease period i.e. 15.12.2018 to 14.12.2028	
11	Man power	:	54 persons	
12	Water Requirement	:	Total water requirement is about 8.12 KLD. 1.62 KLD (Drinking & Domestic Uses) + 3.0 (Plantation) KLD + 3.50 KLD (Dust Suppression).	
13	Water Source	:	by Authorised hired water tankers	

14	DG Set / power	:	125 KVA (Temporary setup for Backup)
15	Crusher	:	No
16	Nearest Water Body	:	Ganga River is about 7.51 km in ENE direction.
17	Nearest Habitation	:	Bara Ghotibere village is about 1.0 Km in ENE direction.
18	Nearest Rail Station	:	Sahibganj railway station is about 5.76 km in ENE direction.
19	Nearest Airport	:	Sido Kanhu airportis about 114 km in SSW direction.
20	Nearest Forest	:	NA
21	Road & Highways	:	NH-133Bis about 2.78 km in N direction.

CO-ORDINATES

Pillar No.	Latitude	Longitude
1	25°13' 30.378" N	87°34' 45.278" E
2	25°13' 31.985" N	87°34' 46.719" E
3	25°13' 33.063" N	87°34' 44.561" E
4	25°13' 34.536" N	87°34' 45.648" E
5	25°13' 35.919" N	87°34' 46.607" E
6	25°13' 37.345" N	87°34' 47.577" E
7	25°13' 36.813" N	87°34' 48.998" E
8	25°13' 36.820" N	87°34' 50.009" E
9	25°13' 36.551" N	87°34' 50.224" E
10	25°13' 35.331" N	87°34' 50.136" E
11	25°13' 34.726" N	87°34' 50.486" E
12	25°13' 34.600" N	87°34' 52.619" E
13	25°13' 32.610" N	87°34' 51.808" E
14	25°13' 30.239" N	87°34' 52.339" E
15	25°13' 27.742" N	87°34' 49.751" E
16	25°13' 28.513" N	87°34' 48.186" E
17	25°13' 29.048" N	87°34' 46.322" E
18	25°13' 29.230" N	87°34' 46.491" E

LAND DETAILS

Khata no.	Plot no.
23	223
06	224
32	225, 226 (P) & 243 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide memo no. 626/M, dated 12.03.2018. ii. Lease deed 15.12.2018 to 14.12.2028.
2	CO	:	The CO, Mandro vide memo no. 474/Ra., dated 26.11.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 1273/M, dated 29.11.2024 certified that 01 other mining lease area (7.29 Acre) exists within 500 meters radius from proposed project site and total area is 17.29 Acre and also certified that said project falls under grid no. 3 and production is within the over all permissible production limit.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2108, dated 02.12.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 87, dated 17.01.2017 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. 113, Page no. 286).
7	Gram Sabha	:	Gram Sabha conducted on 20.06.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by AMO, Sahibganj vide letter no. 1200, dated 10.11.2023.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/212, dated 08.08.2017.

10	Transfer of EC	:	Transfer of EC issued by SEIAA, Jharkhand vide letter no. 53, dated 16.04.2022.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 92, dated 22.01.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-6067003 /2019/585, dated 10.10.2019.
12	Consent to Operate (CTO)	:	i. CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-20326445 /2024/1613, dated 16.10.2024. ii. CTO issued by JSPCB vide Ref. no.: JSPCB/HO/RNC/CTO-20725140/2024/1850, dated 06.12.2024.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1241/M, dated 16.11.2024.
14	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mining scheme has been prepared by him.
15	Baseline Data	:	15th October, 2024 to 15th January, 2025.

Working Details

1	Mining Method	:	OCM &Mechanised	
2	Lease Area	:	10.0 ACRES / 4.05 Ha.	Life of Mine – Upto the lease period i.e. 15.12.2018 to 14.12.2028
3	Waste Generation	:	5 years– 31,154 Cum	
4	Stripping Ratio(t/m^3)	:	00.00	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	190m MSL	
8	Lowest Elevation of lease Area		184m MSL	
9	Ultimate Working Depth	:	30m	
10	Water Table	:	133 Amsl	
11	Topography of Mine	:	The lease area is almost flat land with two hillocks.	
12	Explosive Requirement	:	126 kg per day	
13	Diesel/Fuel requirement		840 Litres per day	

Year wise Production Details

Year	Generation of waste/Soil in Cum	Production of stone in (Cum)	Production of stone in (Ton)
2023-24	21178	89228	240915
2024-25	0.00	92671	250212
2025-26	0.00	78078	210810
2026-27	9976	91059	245859
2027-28	0.00	81234	219332
Total	**31154**	**432270**	**1167128**

Land Use

Type of Land	Exisitng Land use (Ha)	At the end of Plan Period (Ha)	At the end of Mine
Quarry	1.260	3.41 (Including Haul Rd.)	3.41 (Including backfilled 0.13Ha)
Green belt in Safety Barrier	0.64	0.64	0.64
Road	0.008	0.00	0.00
Total area in use	1.908	4.05	**0.00**
Balance unused area	2.142	0.00	0.00
Total existing Area	**4.05**	**4.05**	**4.05**

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	2.0 x 2.0	1600	6400	0.64	Neem, Pipal Bargad Palash **Fruit Bearing**
	Haul Road	2.5 x 2.5	1404	1053M Approach Road 1053/3= 351Plants 351x4row=1404Plant	---	
2nd	Care & Protection	---	---	---	---	

3rd	Care & Protection	---	---	---	---	**Trees** Mango, Jackfruit, Guava, Jamun
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total		--	**3004**	**6400**	**0.64**	

- 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

S .NO.	Particulars	Budget Provisions (Rs.)	
		Capital	Recurring per year
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 6.50 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	1,95,000
	& One dedicated tanker of 5.0 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 1.296KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	1,55,520
2	Maintenance of approach road (Max. Road length 1053 m, Width 4.0 m) @ 100Rs. /Meter.	0	1,05,300
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 894 m x 300 /– meter	2,68,000	26,820
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 3004 No. of plants x 800 Rs.	24,03,200	3,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	0
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		**39,70,900**	**9,91,640**

Environment Monitoring Cell

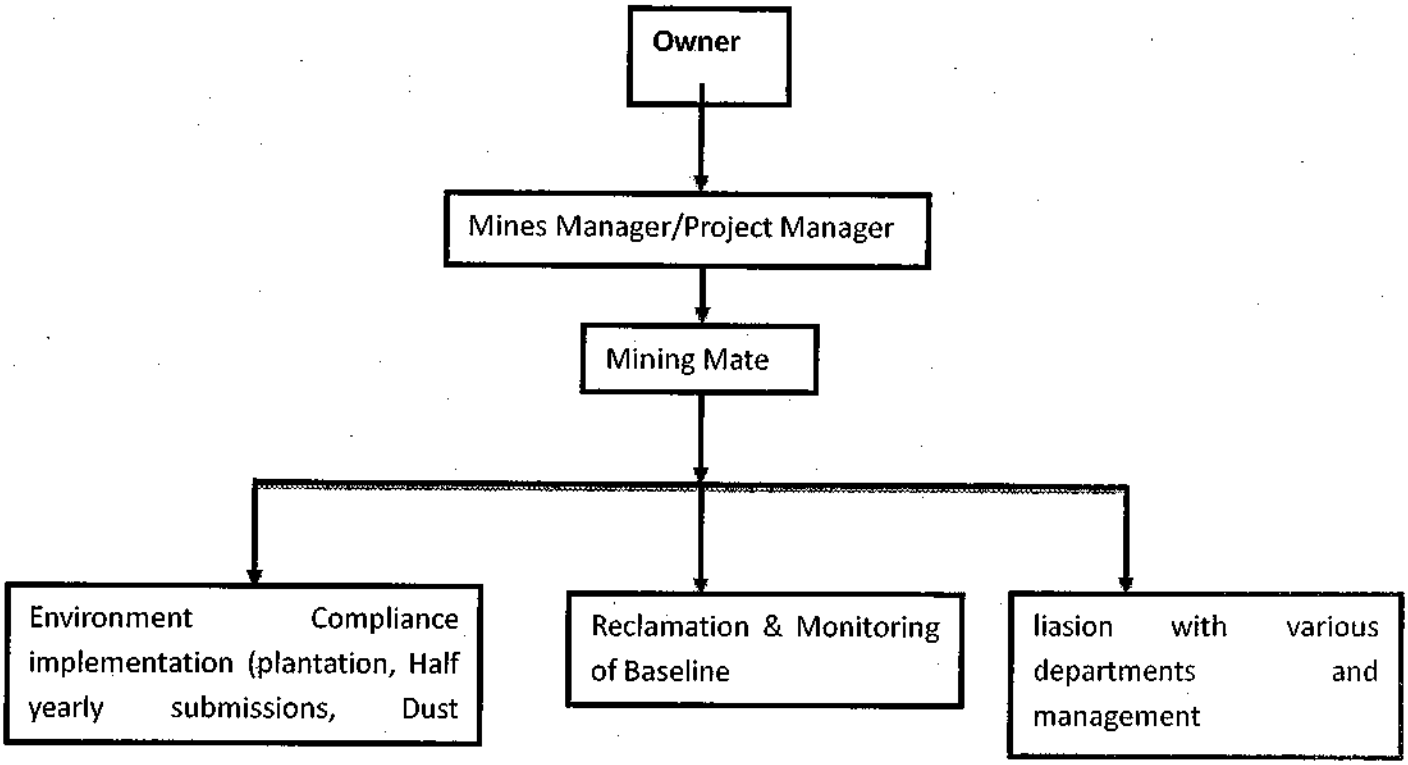

Fig. Chart for Environment Management Cell

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.

Environmental Monitoring period: 15 Oct 2024 to 15 Jan 2025

Baseline Monitoring Location

AIR MONITORING LOCATIONS						
S. No.	**Particulars**	**Distance (KM)**	**Direction**	**Land use**	**Latitude**	**Longitude**
AAQ1	On site	--	--	Project site	25°13'33.23"N	87°34'44.93"E

AAQ2	Demba Village	0.21	N	Residential Area	25°13'43.44"N	87°34'52.05"E
AAQ3	Bara Ghotibere Village	1.08	NNE	Residential Area	25°13'49.73"N	87°35'26.80"E
AAQ4	Hathiddari Village	0.38	SE	Residential Area	25°13'17.37"N	87°34'58.80"E
AAQ5	Lalmatia Village	1.72	W	Residential Area	25°13'26.75"N	87°33'44.01"E
AAQ6	Bhawanichauki	2.24	NW	Residential Area	25°14'30.22"N	87°33'54.18"E
AAQ7	Jhagruchauki	2.43	NNE	Residential Area	25°14'50.71"N	87°35'18.07"E
AAQ8	Ambadiha Village	2.59	NE	Residential Area	25°14'32.00"N	87°35'59.00"E

NOISE MONITORING LOCATIONS						
S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
NQ1	On site	--	--	On site	25°13'33.23"N	87°34'44.93"E
NQ2	Demba Village	0.21	N	Residential Area	25°13'43.44"N	87°34'52.05"E
NQ3	Bara Ghotibere Village	1.08	NNE	Residential Area	25°13'49.73"N	87°35'26.80"E
NQ4	Hathiddari Village	0.38	SE	Residential Area	25°13'17.37"N	87°34'58.80"E
NQ5	Lalmatia Village	1.72	W	Residential Area	25°13'26.75"N	87°33'44.01"E

SOIL MONITORING LOCATIONS						
S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
NQ1	On site	--	--	On site	25°13'33.23"N	87°34'44.93"E
NQ2	Demba Village	0.21	N	Residential Area	25°13'43.44"N	87°34'52.05"E
NQ3	Bara Ghotibere Village	1.08	NNE	Residential Area	25°13'49.73"N	87°35'26.80"E
NQ4	Hathiddari Village	0.38	SE	Residential Area	25°13'17.37"N	87°34'58.80"E
NQ5	Lalmatia Village	1.72	W	Residential Area	25°13'26.75"N	87°33'44.01"E

GROUND WATER MONITORING LOCATIONS						
S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
GWQ1	Demba Village	0.21	N	Residential Area	25°13'43.44"N	87°34'52.05"E
GWQ2	Bara Ghotibere Village	1.08	NNE	Residential Area	25°13'49.73"N	87°35'26.80"E

GWQ3	Lalmatia Village	1.72	W	Residential Area	25°13'26.75"N	87°33'44.01"E

SURFACE WATER MONITORING LOCATIONS

S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
SWQ1	Water Reservoir near Demba Village	0.56	NNW		25°13'2.31"N	87°34'21.62"E
SWQ2	Water Reservoir near Lalmatia Village	1.08	SW		25°13'53.42"N	87°34'37.68"E

Environment Monitoring Plan (Operation Phase)

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.	2 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

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.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed 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.

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 adversegeological faulting or poor work methods. Those at greatest risk will be

workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill 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 orabandoned bench, the risk of minerals or materials falling onto workers at the foot of theface should not be overlooked. A face and bench are a necessary part of a working quarryand 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 atrisk during the drilling operation is the driller. Others such as the manager of the mine ormaintenance personnel, may approach the bench edge during the drilling operation in theevent 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 drillingoperation; part of the training includes instructions to always face towards the openedge 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 thebench
- Provision to attach a safety line to the drilling rig and provide a harness for thedriller to wear.
- Restricted access to the area to all persons except those necessary for the drillingoperation.

  Dust generation during drilling

  The hazard is the inhalation of dust which is created during the drilling operation. Properlyapplied 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 ofwater), exhaust/ vacuum system will be provided which removes the dust from thedrill hole continuously and discharges the same in a dust collector speciallyprovided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposalarrangement.
- Deep wetting of drilling zones will be done by water sprinkling before startingdrilling.

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 willbe assessed. Unless control measures are in place no-one, except those necessary for thework in hand, will be allowed inside the designated noisy area. In most cases this will bethe drill operator.

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

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due toovercharging 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 dustalso 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 vibrationsdo not damage the structures/houses if the quarrying operations are close to humanhabitation.
- Blasting shall be conducted only during favourable weather conditions and onlyduring the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be givenin 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 largequantity 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 incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain 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 smoothtransportation.
- 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 avoidsuspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loadingpoints, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

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 08, 09, 10, 11 & 12.03.2025, 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. 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.

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11. Patsi & Darmi Sand Deposit in North Koel River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Village : Patsi & Damri, Distt. : Garhwa, Jharkhand (16.80 Ha).

(Proposal no.: SIA/JH/MIN/ 503946 /2024)

Name of the consultant : Ecomen Mining Pvt. Ltd., Lucknow, U.P.

This is a new project which has been taken for appraisal on 10.03.2025.

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 108th meeting held on 19 - 25.09.2023 and SEIAA, Jharkhand has approved the ToRs in 109th meeting held on 27th & 28th September, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2931/2023/304, dated 06.10.2023. The final EIA / EMP submitted by PP to SEAC on 18.12.2024.

The P & M Solution, Noida, U.P. was the Environmental Consultant for the present project at the time of obtaining TOR,After the grant of TOR, the work for baseline data collection, Draft EIA EMP, Public Hearing and obtaining EC was assigned to M/s Ecomen Mining Pvt. Ltd. by the Project Proponent.

During its 119thSEAC meeting held on 20/12/2024, the Project Authority (Sand in Charge-I, JSMDC) vide letter no. 2469, dated 20/12/2024, informed the Committee that the change of consultant from P & M Solution, Noida, U.P. to Ecomen Mining Pvt. Ltd., Lucknow, UP was placed after obtaining TOR from SEIAA. The Committee asked to obtain additional one-month baseline study for all the parameters and include the same in the final EIA for submission to SEAC for consideration of EC.

Accordingly, one-month additional environmental baseline data have been collected from 26/12/2024 to 26/01/2025 and the Revised Final EIA EMP was submitted by PP to SEAC on 18/02/2025.

Application for: **Proposed Capacity - 298237 cum/annum or 477179 Tonnes/annum**

Project and Location Details :

Sl	Parameter		Details	
1	Project Name	:	Patsi & Darmi Sand Deposit Block	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Limited	
3	Lease Address	:	Village : Patsi & Darmi, Dist: Garhwa, Jharkhand(16.80 Ha)	
4	Lease Area	:	16.80 ha	Acres- 41.51 Acre
5	Type of Land	:	Govt. non forest (river) land	
6	Project Cost	:	Rs. 80 Lakhs	
7	EMP Budget	:	Capital: 10.5Lakh	Recurring: 9.5 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	:	cum.: - 298237	Tonnes: 477179
10	Mine Life	:	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.	
11	Man power	:	40 (Direct 30, Indirect 10)	
12	Water Requirement	:	3.00 KLD (Drinking: 0.5 KLD, Dust Suppression: 2.0KLD, Plantation: 0.5KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500KVA	
15	Crusher	:	NA	
16	Nearest Water Body	:	Project lies on North Koel River.	
17	Nearest Habitation	:	Apprx 0.34Km towards SE directon	
18	Nearest Rail Station	:	Sigsigi Railway Station, apprx., 2.00Km in North	
19	Nearest Air Port	:	Birsa Munda Airport, approx. 179.68Km towards SE	
20	Nearest Forest	:	Lohardaga PF in North-East direction at apprx 3.0Km	
21	Road & Highways	:	NH 39, apprx 9.72Km in SE direction	

CO-ORDINATES

1	Latitude		From 24° 14' 32.09" N	To 24° 13' 44.02" N
2	Longitude		From 83° 51' 24.24" E	To 83° 52' 2.49" E

LAND DETAILS:

Plot no. (Pasti)	Plot no. (Darmi)
1	1054 & 1055

STATUTORY CLEARANCES:

1	LOI/Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)- 117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Garhwa (Sadar) vide letter no. : 855, dated 13.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in Khatiyan.
3	DMO	:	DMO, Garhwa vide memo no. 1000/M, dated 18.07.2023 certified that no another mining lease area exists 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no. : 978, dated 06.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palamu Wildlife Sanctuary, Betla National Park and Mahuadanr Wolf Sanctuary.
5	DFO Territorial	:	DFO, Garhwa North Forest Division vide letter no. : 605 & 606, dated 28.03.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Garhwa.
7	Gram Sabha	:	Gram Sabha conducted on 23.06.2023.

8	Mine Plan Approval	:	Assistant Mining Officer, Garhwa vide letter no. 702, dated 30.05.2023.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.
10	Public Hearing	:	Public Hearing conducted on 30.08.2024.
11	Baseline Data Period	:	March, 2024 to May, 2024. Additional one-month baseline study collected from 26/12/2024 to 26/01/2025

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	16.80 ha or 41.51 Acre	Life of Mine – Upto15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.
3	Waste Generation	:	NA, as it is sand mining project	
4	Stripping Ratio	:	0:0	
5	Working Days	:	220	
6	Benches: size & No	:	Bench height – 2.0 m & Bench width - 20.0 m.	
7	Elevation of Mine	:	379 AMSL to 384 AMSL	
8	Ground Level Elevation	:	370 AMSL	
9	Ultimate Working Depth	:	360 AMSL	
10	Water Table	:	350 AMSL (20 mbgl)	
11	Topography of Mine	:	Area lying in river plain.	
12	Explosive Requirement	:	NA	
13	Diesel/Fuel requirement	:	110 litr/day	

Production Details

Year	Thickness (m)	Average Replenishment Rate	Production of sand (Cum)	Production of sand –MT
1st Year	2	60%	298237	477179

The Development Plan submitted along with the mine plan relates to mining operation during the first year.

Land Use

Type of Land	Area in (ha)
Forest Land	Nil
Govt. waste land (River)	16.80
Residential area	Nil
Company land	Nil
Private Land	Nil
Total	**16.80**

Public Hearing:

Public hearing was successfully executed on date 30.08.2024 at 11:30 AM.

S. No.	Name and Address	Issues raised by Locals/Public	Reply of Project Proponent	Action Plan
1.	Shri AP Singh, Patsa	What will be the transportation route for carrying sand and from how much depth sand to be excavated ? Jobs to be provided to locals.	Sand will be excavated till 2.5 meter depth and Online monitoring will be done of sand excavation.	Sand will be excavated till 2.5 meter depth and Online monitoring will be done of sand excavation.
2.	Shri Shafiq Khan, Mukhiya, Pratappur	What will be measure for environment and Air pollution control ? What will be the provision of JOBS to locals ?	Dust suppression will be done on regular basis on the transportation road. Jobs will be given to locals and Sand will be excavated by labors.	Water Sprinkling will be carried out on regular basis from the first year of mining for which the budget of Rs. 2.00 lakh will be spent every year. The Budget for Water Sprinkling has been incorporated in EMP
3.	Shri Sunil Singh, Patsa	There can be problem of water due to sand mining.	Sand will be excavated above water level.so there will not be any water problem.	Sand excavation will be done above the ground water table

4.	Shri Ajay Vishvakarma, Deputymukhiya, Patsa	Jobs shall be given to Locals	Yes employment will be given to locals	Employment will be given as per the merit.
5.	Dr. Birbal Vishwakarma, Patsa	Transportation of sand should be done through alternate route avoiding village roads. What time transportation will be done?	We will check the alternate route for mineral transportation in consultation with Village Panchayat. Sand will be transported during period from 6 A.m to 6 P.m	Trucks will be covered with tarpaulin Sand transportation will be done strictly during day light.

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone		-	50
2	Along Approach Road		0.43Km	68
3	In village areas, in consultation with local authorities		--	50

- 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 Plan

Sl. No.	Description	Capital Cost (in lakhs)	Recurring Cost (in lakhs)
1.	Dust suppression through water tankers for mine haul roads	2.0	2.0
2.	Afforestation/Greenbelt Development	2.0	1.0
3.	Environmental Monitoring	2.0	5.0
4.	Air Pollution Control	1.0	0.5

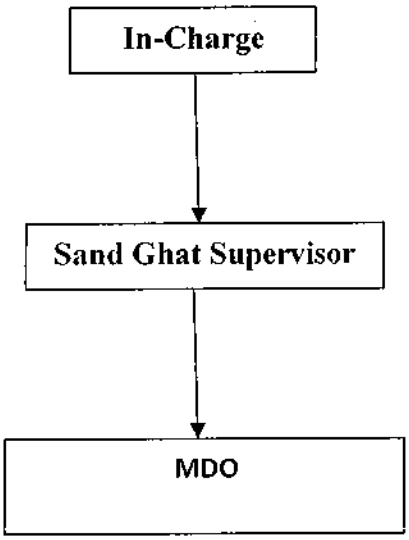
5.	Water Pollution Control	1.0	0.3
6.	Noise Pollution Control	0.5	0.2
7.	Occupational Health Safety & Measures (Drinking water facilities, Sanitation)	1.5	0.5
	Total	10.5	9.5

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	5 Stations	6 Monthly
2	Soil	4 Stations	6 Monthly
3	Surface Water	3 Stations	6 Monthly
4	Ground Water	4 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

•No solid waste is generated during the course of mining.



Organization Structure

Water Quality Management

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. Sewage from rest shelter would be treated in Septic Tank soak pit.

C. There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

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

II. **Loading of Product on tippers** – Water will be sprinkled on excavated Sand mass before they are loaded to trucks for transport.

III. **Movement of tippers on Road** – Movement of tippers 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 Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand 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

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.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

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

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- 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 tractor. Large earth moving equipment's are not 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/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach 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. 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.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the NH-39 will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

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 Patsi & Darmi Sand Deposit in North Koel River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Village : Patsi & Damri, Distt. : Garhwa, Jharkhand (16.80 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area 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 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 checkup 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 within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore

bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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12. **Amlo Expansion Opencast Project (3.00 MTPA to 3.6 MTPA) of M/s Central Coalfields Limited (CCL), Village : Karo, Amlo & Dhori, Tehsil : Bermo, Distt. : Bokaro, Jharkhand (247.59 Ha).**

(Proposal no.: SIA/JH/CMIN/ 515359 /2025)

Name of the consultant : CMPDI, RI-III, Ranchi.

This is an expansion project which has been taken for appraisal on 10.03.2025.

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

Application for expansion of Environment Clearance under clause 7(ii) (a) of EIA Notification, 2006.

EC Application for: Opencast Coal Mining& Highwall Mining:3.60 MTPA in an area of 247.59 Ha.

Amlo OCP, an existing opencast coal mine in East Bokaro Coalfields under the Dhori area of CCL, currently operates with EC for 3.0 MTPA (Peak) within a project area of 247.59 Ha. To enhance production, a revised Mining Plan & Mine Closure Plan was approved by the CCL Board on 20.06.2024 for 4.50 MTPA, including the introduction of high wall mining in designated patches.

For Phase-I expansion, the EIA/EMP has been prepared for increasing capacity from 3.0 MTPA to 3.60 MTPA within the existing area, following MoEFCC's OM dated 11.04.2022 under Clause 7(ii)(a) of EIA Notification, 2006. Baseline data was collected during Winter 2023-24, and the proposal for EC expansion was submitted to MoEFCC on 20.12.2024 as per the Standard ToR.

PROJECT and LOCATION Details:

Sl	Parameter		Details	
1	Project Name	:	Amlo Expansion OCP	
2	Project Proponent	:	Shri Rajeev Kumar Singh, Project Officer, Amlo Expansion OCP	
3	Address	:	Office of the Project Officer, Amlo OCP, Dhori Area, Central Coalfields Limited, PO-Dhori, Dist-Bokaro, Jharkhand. PIN- 825102Phone Number – 8987784922	
4	Area	:	247.59 ha	Acres: 611.81 Acres
5	Type of Land	:	Forest Land: 197.724 Ha & Non-Forest Land: 49.866 Ha	
6	Project Cost	:	23848.46 Lakh	
7	EMP Budget	:	Capital: 3476.33 Lakhs	Recurring: 211.31 Lakh / year
8	PH Compliance Budget	:	Rs. 1507.87 Lakh (for compliance of action plan of Public Hearing)	
9	New or Expansion	:	Expansion	
10	Mineable Reserves	:	Coal: 13.72 Million Tonnes	OB: 5.25 Million Cu. M.
11	Mine Life	:	04 years	
12	Man power	:	928	
13	Water Requirement	:	738 KL/Day	
14	Water Source	:	Mine seepage & rain water stored in mine sump	
15	DG Set / power	:	3 DG Sets of 180 kVs are there in the project	
16	Crusher	:	Yes 5 Numbers of capacity 4.5 MTPA	
17	Nearest Water Body	:	Damodar River (2 KM)	
18	Nearest Habitation	:	Phusro (1 KM)	
19	Nearest Rail Station	:	Phusro Railway Station (3 KM)	
20	Nearest Air Port	:	Ranchi (130 KM)	
21	Nearest Forest	:	Within Project boundary	
22	Road & Highways	:	Phusro-Dumri Road (0.5 km)	

CO-ORDINATES:

1	Latitude		From 23°46′ N	To 23°48′ N
2	Longitude		From 85°59′ E	To 86°01′E

STATUTORY CLEARANCES :

1	Lease docs	:	The said land has been acquired under CBA vide S.O. No.: 3160 dated 29.07.1983 & Nationalization deed 2267 of 1936.
2	CO	:	The CO, Bermo (Bokaro) vide letter no. 144, dated 06.02.2025 has mentioned that the 39.975 Ha of the project is recorded as "Jangle Jhari" in R.S. Khatiyan & Register II.
3	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 888, dated 17.05.2024 certified that the said project is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
4	DFO Forest Distance	:	DFO, Bokaro Forest Division vide letter no. 1954, dated 13.09.2024 certified that the distance of reserved / protected forest is Zero (0) meter from proposed project site.
5	Mine Plan Approval	:	Ref No.: - CS/BM/540/2024/205, Dated: - 20.06.2024.
6	Public Hearing	:	Conducted on 05.08.2008.
7	CGWA	:	NOC for Ground Water Abstraction from CGWA has been approved vide Application No.21-4/1019/JH/MIN/2022 dated 24.01.2024.
9	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. No. JSPCB/HO/RNC/CTO-19428526/2024/1550, dated 30.09.2024 for capacity 3 MTPA.
10	Monitoring report on the status of compliance of the conditions in EC	:	Monitoring report on the status of compliance of the conditions in EC issued by Regional Office, MoEF&CC, Govt. of India vide F.No. 103-302/11/EPE/660, dated 18.10.2024.Issuance of Certified Action Taken Report by RO vide F.No. 103-302/11/EPE/134, dated 24.02.2025.
11	Previous EC	:	Previous EC granted by MoEF, Govt. of India vide No. J-11015/35/2007-IA.II (M), dated 30.09.2010. Issuance of Certified Action Taken Report by ROvide F.No. 103-302/11/EPE/134, dated 24.02.2025.
12	Hazardous Waste Authorization	:	JSPCB/HO/RNC/HWM-14225840/2023/46 Dated: 05.08.2023.
13	Forest Clearance	:	

TOTALML/PROJECT AREA (ha)	TOTAL FOREST LAND (ha)	Proposal No. and Date of FC	Extent of forest land	Balance area for which FC is yet to be obtained	Status of appl. For diversionof forest land

				247.59 (Forest=197.724) +Non-Forest=49.866)	197.724 (158.061+39.663)	**a.222.324 Ha** (FNo.8-136/2002-FCdated 07/06/2004)	158.06 Ha	Nil	Already Diverted
						b.39.663 Ha (FP/JH/MIN/25031/2017/4572 dated05/03/2021)	39.663 Ha	Nil	Already Diverted

Production Details: Since grant of previous EC:

Year	Coal (in MTe)	Year	Coal (in MTe)
2010-11	2.041	2017-18	1.117
2011-12	1.686	2018-19	1.939
2012-13	1.147	2019-20	1.430
2013-14	2.302	2020-21	1.184
2014-15	1.867	2021-22	1.934
2015-16	1.937	2022-23	2.472
2016-17	2.066	2023-24	2.613

Working Details:

1	Mining Method	:	Shovel-Dumper Combination & Highwall Mining
2	Mineable Reserve	:	13.72 millionTe
3	Overburden Generation	:	16.97million Cu. M.
4	Stripping Ratio	:	1.37Cu.M/Te
5	Working Days	:	365
6	Depth of quarry	:	160m (maximum)
7	Seams considered	:	BERMO, X, IX,VIII, VI by opencast and Seam VI to X by highwall miner
8	Grade	:	W-III - W-IV
9	Life	:	04 Years

Coal Transportation Route:

Out of total coal production of 3 MTPA, following transport arrangement is proposed.

i) In pit: By Dumpers
ii) Surface to siding: Through Dhori railway siding (approx. 2.3 km from mine) and to local consumers by State-Highway (Dumri-Bermo Road)

LAND DETAILS:

Land schedule of 247.59 Ha. of Amlo Expansion OCP						
Amlo, Khata No's :- 1 2 3 4 9 10 11 12 13 14 16 17 18 20 21 22 24 25 26 27 28 30 31 34 39 40						
Karo , Khata No's :- 1						
Dhori, Khata No's :- 131						
Sl. No.	Village	Plot No.	GM (Acre)	Tenancy (Acre)	Notified Forest (Acre)	GM J/J (Acre)
1	Amlo	38		0.15		
2	Amlo	39(P)			8.955	10.205
3	Amlo	41		1.96		
4	Amlo	42		0.50		
5	Amlo	43		0.20		
6	Amlo	44		0.55		
7	Amlo	45		1.88		
8	Amlo	46(P)			41.463	8.772
9	Amlo	47(P)			26.667	0.445
10	Amlo	138(P)			10.526	
11	Amlo	139			71.026	5.474
12	Amlo	140	1.36			
13	Amlo	141		1.36		
14	Amlo	142		0.07		
15	Amlo	143		0.12		
16	Amlo	144		0.04		
17	Amlo	145		0.01		
18	Amlo	146		0.03		
19	Amlo	147		0.31		
20	Amlo	148		0.19		
21	Amlo	149		0.07		
22	Amlo	150		0.42		
23	Amlo	151		0.26		
24	Amlo	152		0.27		
25	Amlo	153		0.22		
26	Amlo	154		0.06		
27	Amlo	155		0.46		
28	Amlo	156		0.04		
29	Amlo	157		0.09		
30	Amlo	158		0.56		
31	Amlo	159		0.37		
32	Amlo	160		0.62		
33	Amlo	161			32.222	37.697

34	Amlo	162		0.27		
35	Amlo	163		0.58		
36	Amlo	164		0.08		
Sl. No.	**Village**	**Plot No.**	**GM (Acre)**	**Tenancy (Acre)**	**Notified Forest (Acre)**	**GM J/J (Acre)**
37	Amlo	165		0.29		
38	Amlo	166		0.52		
39	Amlo	167		0.06		
40	Amlo	168		0.23		
41	Amlo	169		0.15		
42	Amlo	170		0.44		
43	Amlo	171		0.24		
44	Amlo	172		0.41		
45	Amlo	173		0.13		
46	Amlo	174		0.10		
47	Amlo	175		1.43		
48	Amlo	176		0.68		
49	Amlo	177		0.59		
50	Amlo	178		1.77		
51	Amlo	179		0.30		
52	Amlo	180			6.04	
53	Amlo	181		1.26		
54	Amlo	182		1.39		
55	Amlo	183	0.20			
56	Amlo	184		0.38		
57	Amlo	185		1.05		
58	Amlo	186		1.01		
59	Amlo	187(P)			1.54	
60	Amlo	188		0.19		
61	Amlo	189		0.36		
62	Amlo	190		0.02		
63	Amlo	191	0.07			
64	Amlo	192		0.01		
65	Amlo	193		0.48		
66	Amlo	194		0.47		
67	Amlo	195		0.32		
68	Amlo	196		1.96		
69	Amlo	197		0.43		
70	Amlo	198			0.10	
71	Amlo	199				0.2
72	Amlo	200		1.79		
73	Amlo	201(P)		0.67		

74	Amlo	202(P)		0.28		
75	Amlo	203(P)		0.89		
76	Amlo	208(P)		1.74		
77	Amlo	219(P)		2.95		
78	Amlo	226(P)				7.734
79	Amlo	227		0.35		
Sl. No.	**Village**	**Plot No.**	**GM (Acre)**	**Tenancy (Acre)**	**Notified Forest (Acre)**	**GM J/J (Acre)**
80	Amlo	228		0.53		
81	Amlo	462(P)		0.59		
82	Amlo	464(P)	0.37			
83	Amlo	465(P)		0.17		
84	Amlo	466		0.55		
85	Amlo	467(P)				0.35
86	Amlo	468	0.36			
87	Amlo	469		0.67		
88	Amlo	470		0.16		
89	Amlo	471		0.04		
90	Amlo	472		0.09		
91	Amlo	473		0.10		
92	Amlo	474		0.08		
93	Amlo	475	0.10			
94	Amlo	476		0.24		
95	Amlo	477		0.21		
96	Amlo	478		0.11		
97	Amlo	479	0.05			
98	Amlo	480	0.01			
99	Amlo	481		0.28		
100	Amlo	482	0.05			
101	Amlo	483		0.78		
102	Amlo	484	0.02			
103	Amlo	485		0.58		
104	Amlo	486	0.03			
105	Amlo	487		0.43		
106	Amlo	488		0.2		
107	Amlo	489		0.08		
108	Amlo	490		0.44		
109	Amlo	491		0.20		
110	Amlo	492		0.51		
111	Amlo	493(P)		0.29		
112	Amlo	494(P)		0.57		
113	Amlo	495		0.21		

114	Amlo	496		0.18		
115	Amlo	497(P)		0.57		
116	Amlo	498(P)		0.34		
117	Amlo	543(P)		0.25		
118	Amlo	545(P)		0.42		
119	Amlo	546		0.05		
120	Amlo	547		0.35		
121	Amlo	548		0.01		
122	Amlo	549(P)	0.57			
Sl. No.	**Village**	**Plot No.**	**GM (Acre)**	**Tenancy (Acre)**	**Notified Forest (Acre)**	**GM J/J (Acre)**
123	Amlo	550	0.06			
124	Amlo	551		0.30		
125	Amlo	552		0.26		
126	Amlo	553		0.19		
127	Amlo	554		0.37		
128	Amlo	555		0.02		
129	Amlo	556	0.03			
130	Amlo	557		0.02		
131	Amlo	558		0.07		
132	Amlo	559		0.12		
133	Amlo	560		0.01		
134	Amlo	561		0.49		
135	Amlo	562		0.03		
136	Amlo	563	0.21			
137	Amlo	564		0.18		
138	Amlo	565		0.02		
139	Amlo	566		0.61		
140	Amlo	567		0.06		
141	Amlo	568		0.03		
142	Amlo	569		0.06		
143	Amlo	570		0.19		
144	Amlo	571		0.02		
145	Amlo	572		0.04		
146	Amlo	573(P)		0.38		
147	Amlo	574		0.15		
148	Amlo	575(P)	0.08			
149	Amlo	576(P)		0.11		
150	Amlo	754(P)		2.66		
151	Amlo	756(P)		0.30		
152	Amlo	757		0.03		
153	Amlo	758		0.02		

154	Amlo	759(P)	0.95			
155	Amlo	760		0.24		
156	Amlo	761		0.17		
157	Amlo	762		1.43		
158	Amlo	763		0.5		
159	Amlo	764		0.29		
160	Amlo	765		0.45		
161	Amlo	766		0.41		
162	Amlo	767		1.05		
163	Amlo	768		0.21		
164	Amlo	769		0.43		
165	Amlo	770		0.13		
Sl. No.	**Village**	**Plot No.**	**GM (Acre)**	**Tenancy (Acre)**	**Notified Forest (Acre)**	**GM J/J (Acre)**
166	Amlo	771		0.38		
167	Amlo	772		0.32		
168	Amlo	773		0.47		
169	Amlo	774		0.40		
170	Amlo	775				0.41
171	Amlo	776		0.38		
172	Amlo	777		2.33		
173	Amlo	778		0.41		
174	Amlo	779		0.53		
175	Amlo	780		0.18		
176	Amlo	781	0.53			
177	Amlo	782	0.32			
178	Amlo	783		0.15		
179	Amlo	784		0.38		
180	Amlo	785	0.08			
181	Amlo	786		0.46		
182	Amlo	787		0.11		
183	Amlo	788	0.49			
184	Amlo	789		0.32		
185	Amlo	790		0.43		
186	Amlo	791		0.01		
187	Amlo	792		0.15		
188	Amlo	793		0.22		
189	Amlo	794	0.02			
190	Amlo	795		0.1		
191	Amlo	796		0.04		
192	Amlo	797		0.25		
193	Amlo	798		0.35		

194	Amlo	799		0.05		
195	Amlo	800		0.02		
196	Amlo	801		0.2		
197	Amlo	802		0.03		
198	Amlo	803		0.05		
199	Amlo	804	0.02			
200	Amlo	805		0.33		
201	Amlo	806		0.05		
202	Amlo	807	0.15			
203	Amlo	808		0.15		
204	Amlo	809		0.08		
205	Amlo	810		0.09		
206	Amlo	811		0.06		
207	Amlo	812		0.26		
208	Amlo	813		0.06		
Sl. No.	**Village**	**Plot No.**	**GM (Acre)**	**Tenancy (Acre)**	**Notified Forest (Acre)**	**GM J/J (Acre)**
209	Amlo	814		0.34		
210	Amlo	815(P)		0.2		
211	Amlo	816		0.56		
212	Amlo	817		0.01		
213	Amlo	818		0.21		
214	Amlo	819		0.39		
215	Amlo	820(P)	0.01			
216	Amlo	821		0.11		
217	Amlo	822		0.48		
218	Amlo	823		0.48		
219	Amlo	824		0.27		
220	Amlo	825		0.22		
221	Amlo	826		0.12		
222	Amlo	830		1.4		
223	Amlo	831		0.1		
224	Amlo	832		0.1		
225	Amlo	834		0.24		
226	Amlo	835		0.19		
227	Amlo	836		0.12		
228	Amlo	838		0.01		
229	Amlo	839		1.56		
230	Amlo	840(P)		0.24		
231	Amlo	841		0.13		
232	Amlo	842		0.16		
233	Amlo	843		0.04		

234	Amlo	844		0.94		
235	Amlo	846		0.54		
236	Amlo	847		0.85		
237	Amlo	848		1.95		
238	Amlo	849		0.25		
239	Amlo	850		0.42		
240	Amlo	851		0.13		
241	Amlo	852		0.06		
242	Amlo	853		0.02		
243	Amlo	854		0.04		
244	Amlo	855(P)		0.59		
245	Amlo	856(P)		0.33		
246	Amlo	857(P)		3.09		
247	Amlo	860(P)		0.2		
248	Amlo	861		0.08		
249	Amlo	862(P)		0.19		
250	Amlo	866(P)				4.75
251	Amlo	867		0.46		
Sl. No.	**Village**	**Plot No.**	**GM (Acre)**	**Tenancy (Acre)**	**Notified Forest (Acre)**	**GM J/J (Acre)**
252	Amlo	868		1.1		
253	Amlo	869		0.11		
254	Amlo	870		0.16		
255	Amlo	871				0.10
256	Amlo	872		0.06		
257	Amlo	873		2.26		
258	Amlo	876		1.09		
259	Amlo	877		0.51		
260	Amlo	878		0.15		
261	Amlo	879		0.06		
262	Amlo	881		1.92		
263	Amlo	882		1.64		
264	Amlo	883		0.85		
265	Amlo	885		0.1		
266	Amlo	886		0.13		
267	Amlo	887		0.36		
268	Amlo	888		0.24		
269	Amlo	889		1.72		
270	Amlo	890		0.5		
271	Amlo	891		1.01		
272	Amlo	892		0.3		
273	Amlo	893		0.37		

274	Amlo	894		0.25		
275	Amlo	895		0.75		
276	Amlo	896		0.16		
277	Amlo	897				2.80
278	Amlo	898		0.21		
279	Amlo	899		0.19		
280	Amlo	900		0.13		
281	Amlo	901		1.01		
282	Amlo	902		0.86		
283	Amlo	903		0.37		
284	Amlo	904		0.37		
285	Amlo	905		0.68		
286	Amlo	906		0.35		
287	Amlo	907		0.35		
288	Amlo	908		0.4		
289	Amlo	909		0.24		
290	Amlo	910				0.33
291	Amlo	911		0.29		
292	Amlo	912		0.47		
293	Amlo	913		0.62		
294	Amlo	914		0.08		
Sl. No.	**Village**	**Plot No.**	**GM (Acre)**	**Tenancy (Acre)**	**Notified Forest (Acre)**	**GM J/J (Acre)**
295	Amlo	915		0.22		
296	Amlo	916(P)			30.141	5.667
297	Amlo	921		0.12		
298	Amlo	947		0.16		
299	Amlo	948		0.09		
300	Amlo	839/947		0.16		
301	Amlo	838/948		0.09		
302	Amlo	750/ 949(P)		0.12		
303	Karo	351		1.96		
304	Karo	352				0.21
307	Karo	353				1.836
305	Karo	354		0.86		
306	Karo	355				0.759
308	Karo	356				0.30
309	Karo	357(P)		3.85		
310	Karo	358			0.717	
311	Dhori	3020			160.400	1.127
312	Dhori	241				9.612

	6.140	117.080	389.797	98.778
Area in Acre	123.22		389.797	98.778
Area in Ha.	49.866		157.749	39.975
Total Area in Ha.	247.59			

Land Type Breakup:

SN	Particulars	Area (Ha.)
1	Notified Forest Land	157.749
2	GM JJ Land	39.975
Total Forest Land (a)		**197.724**
3	Non-Forest Land (b)	49.866
Total Project Area (a+b)		**247.59**

Status of Forest Land:

TOTAL FOREST LAND (ha)	Proposal No. and Date ofFC	Total Area in Ha	Extent of forestland within Project Area of Amlo OCP	Statusof appl. For diversionof forest land
197.724 Ha	FNo.8-136/2002-FC Dated:07/06/2004	222.324 Ha	158.06Ha	Stage-II FC granted
	FP/JH/MIN/25031/2017/4572 Dated:05/03/2021	39.663 Ha	39.663Ha	Stage-II FC granted

The major conditions prescribed as per the approved Forestry Clearance are submitted below:

1) Wherever possible and technically feasible, the User Agency shall undertake afforestation measures by involving local community in the blanks within the lease area, as well as along the roads outside the lease area diverted under this approval, in consultation with the State Forest Department at the project cost.
2) The User Agency either itself or through the State Forest Department shall undertake fencing, protection and afforestation with native species of the safety zone area (7.5-meter strip shall be kept within the mining lease or mining cluster, as applicable and such other areas as specified in the approved mining plan) at the project cost.
3) The mining should be done in scientific and systematic phased manner.

It was further instructed that the Project Proponent (PP) shall ensure compliance with all conditions stipulated in the Stage-II Forest Clearance (FC) letters for 222.324 Ha and 39.663 Ha.

Land Use During Mining:

SN	Land Use	Total Area in Ha
1	Excavation Area & Haul Road (Including High wall Mining, Internal Dump and Mine Void)	145.46
2	External OB Dump	46.26
3	Infrastructure Area (W/S, Store, S/S, Rest shelter)	3.06
4	Greenbelt and Safety zone	52.81
	Total Area in Ha.	**247.59**

Post-Mining Land Use Plan:

Proposed Mining Plan			Post Mining Land Use		
SN	**Land Use**	**Area (Ha)**	**Plantation**	**Public/Company Use**	**Void filled with water**
1	Proposed Excavation Area	35.32	16.08	-	19.24
2	Area Proposed for High-wall Mining	23.95	-	23.95	-
3	Area excavated and Backfilled and external dump	132.45	132.45	-	-
4	Infrastructure Area	3.06	-	3.06	-
5	Greenbelt and Safety zone	52.81	52.81	-	-
Total		**247.59**	**201.34**	**27.01**	**19.24**

ENVIRONMENT MANAGEMENT PLAN:

a) **Green Belt & Plantation Development Plan:**

Year	Green Belt Development		Plantation on Backfilled area and External OB dump		Total Plantation cost (in Rs. Lakhs)
	Area (Ha)	Trees (000)	Area (Ha)	Trees (000)	
Y1	12	30	-	-	42
Post Closure Y1	-	-	38	95	133
Post Closure Y2	-	-	50	125	175
Post Closure Y3	-	-	35.24	88.10	123.34

Total	12	30	123.24	308.10	473.34

b) **Water Quality Management:**

Existing Measures:

i. Mine Sumps have been provided for collection and treatment of Mine Seepage water.
ii. Workshop effluent is being treated at ETP consisting of Oil and grease trap and Sequential Settling ponds.
iii. Embankment along Joria Nala and other local stream (nala) to prevent surface run-off.
iv. Garland drains along with ponds have been provided all around the mine periphery to treat surface run-off and prevent soil erosion.
v. Catch/Strom water drains have been provided in residential colonies/industrial installations
vi. Roof-Top Rainwater Harvesting Structures have been established at Project Office, Amlo OCP by the project authority to replenish the GW level in the study area
vii. Check dams have been made over local streams to enhance the recharge potentiality of the stream bed as a result of increment residence time of surface water in the stream due to the artificial structures.

Proposed Measures:

SN	Details	Cost (in Rs. Lakhs)	Timeline
1	1.5 km of the retaining wall constructed, at the toe of the OB dumps within the mine to check run-off and siltation	70	June-2025
2	Upgradation of the existing Effluent Treatment Plant	42	July-2025
3	Sewage Treatment Plant for Colony	900	April-2026
4	Proposal to establish 2 nos. piezometers with Digital Water Level Recorder	20	May-2025

c) **Air Quality Management:**

Existing Measures:

i. Fixed water sprinkling System at Dhori siding
ii. 5 water sprinklers of 12 KL and 20 KL capacities and 2. No. of 28kL Mist type sprinklers deployed
iii. Shower type water sprinklers for coal loaded trucks
iv. 01 number Wheel Washing System installed at Mine entry & Exit Point
v. 1 no. of continuous air monitoring systems deployed at Transit Camp, Chapri near Amlo OCP
vi. 1 no. of PM10 Analyzer is deployed at Dhori Siding, Amlo OCP.
vii. 33.50 Ha of the area has been reclaimed with plantation.
viii. Personnel working in mines are provided with protective respiratory devices and PPE kit.

Proposed Measures:

SN	Activity	Cost (in Rs. Lakhs)	Timeline
1	Installation and commissioning of fixed type water sprinklers a) Along both platforms at Dhori siding under AADOCM b) From Check post to 7 No. Coal stock, along haul roads, and other permanent dusty places	150.00	Sep-2025
2	Trolley mounted Fog Canon	40.00	Dec-2025
3	08 nos.Trolley/Truck mounted Air mist guns/ fog canons to be installed & made operational to reduce air pollution.	52.00	Dec-2025
4	PM_{10} Rom (10ft X 10ft) at E&M Workshop	2.00	Dec-2025

d) <u>Socio-Economic Study:</u>

i) Socio-economic study of core and buffer zone of Amlo OCP was carried out by CMPDI during Post-Monsoon of 2024. This includes an analysis of the project's impact on employment, income, education, health facilities, rural infrastructures and local businesses, as well as its effects on the overall health and well-being of the community.

ii) With a total population of 115568 people, the study area consists of 44 villages spread throughout 3 sub districts of the Bokaro district with no village in the core zone.

iii) No Rehabilitation and Resettlement is involved in this project.

iv) The mitigation measures focus on education and health, including setting up schools, scholarships, healthcare centers, and telemedicine services. Water and sanitation initiatives involve installing hand pumps, water treatment plants, drainage systems, and waste management programs. Livelihood support includes skill training, apprenticeships, and local business investment. Environmental conservation efforts promote water conservation, rainwater harvesting, and pollution control.Accordingly, a need-based CSR Action plan has been prepared and proposed as below:

Sector	Activity	Objective	Budget Allocation (in Lakh)	Timeline	Expected Outcome
Healthcare	Organizing Health Camps and Mobile Medical Units	Provide preventive healthcare services and address primary health concerns in nearby villages	15.00	Throughout the mine life	Improved health awareness, early detection of diseases, and increased access to medical services for over 2000 beneficiaries per camp
	Installation of RO Water Purifiers in	Ensure access to clean drinking water for	12.00	Throughout the mine life	Enhanced health conditions, reducing water-borne diseases for approximately 1,200

	Schools	students			students
Education	Distribution of Educational Kits (Books, Stationery, and Bags)	Support underprivileged students to continue their education	10.00	Throughout the mine life	500 students to benefit from improved access to learning materials
	Community development and livelihood related activities	Enhance employability for youth through technical and vocational training	10.00	Throughout the mine life	youth trained in trades such as welding, tailoring, and electrical work
Environment	Drive of distribution of Plants saplings	Improve the local ecosystem and reduce dust pollution	10.00	Throughout the mine life	5,000 saplings planted with community involvement
	Development of a Desilting of Ponds/ dug well	Conserve water resources and ensure sustainable water supply	16.00	Throughout the mine life	Improved groundwater recharge benefiting over 2-3 Villages
Infrastructure	Construction of Toilets in Schools and Community Halls	Promote hygiene and sanitation	6.00	Throughout the mine life	Improved sanitation facilities for approximately 1,500 beneficiaries
Sports & Culture	Organizing Annual Sports Tournament	Promote fitness, teamwork, and community bonding	10.00	Throughout the mine life	Participation from 20+ local teams and youth engagement
	TOTAL		**119.0**		

e) **Provision of Action Plan of Public Hearing:**

i) Public consultation including public hearing was conducted on 05.08.2008 through JSPCB as per the as per the provisions/procedure contained in the EIA notification, 2006.

ii) A detailed compliance of issues raised in PH along with additional budgetary provision and timeline for Rs. 15.07 Crore has been prepared and submitted as below:

SN	Issues Raised	Budgetary Provision in Lakh	Timeline
1	Plan for tree plantation	Budget separately provided under EIA/EMP Head	--
2	Plan for pollution prevention, sprinkling / adverse effects of mines on the environment.	Budget separately provided under EIA/EMP Head	--
3	Plan to reduce the impact of blasting and dust particles		
4	Water supply in the nearby village	700 Lakh	Throughout the mine life
5	Electricity supply in the nearby villages	57.87 Lakh	FY 2025-26
6	Provision for employment of displaced people and Skill Development	150 Lakh	Throughout the mine life
7	Plan to provide medical facilities to the nearby villagers	300 Lakh	Throughout the mine life
8	Basic Amenities & its improvement like roads etc.	300 Lakh	Throughout the mine life
Total Cost		**1507.87 Lakh**	

f) Solid Waste Management:

i) Overburden 16.97million Cu. M. will be generated which will be stored in the external & internal OB Dump and will be utilized as per approved mine closure plan.

ii) Municipal Solid Waste expected to be generated is 1913 KG/Day. Segregation of waste will be done at the source itself. Recyclable waste will be handed over to the Govt. authorised recycling agency as per the MSW Rules, 2016. Bio-degradable waste will be dumped at composting site for decomposition and the output manure will be used by the project for the plantation and reclamation activities.

g) Wildlife Management Plan and Budgetary Provision:

i) There are no National parks, Sanctuaries, Biosphere Reserves, Wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), within 10 km of the mine lease area.

ii) 06 Schedule I species viz. Shikra, Indian Jackal, Jungle Cat, Common Indian Porcupine, Indian peafowl, Common Rat Snake has been observed in the study area.

iii) The Project authorities have submitted a comprehensive Conservation Plan of Schedule-I Species to the Divisional Forest Officer Bokaro vide letterno. PO/AADOCM/Comp. Conc. Plan/2024-25/2789 dated02.12.2024 for approval.

Component	Provision in Rs. Lakh
Conservation Measures for Schedule-I species	98.12 Lakh

Total EIA/EMP Expenditure:

i) Total Capital Environmental Management Cost has been estimated as Rs. 3476.33 Lakh whereas the annual recurring management cost is assessed to be around 211.31 Lakh. The detailed head-wise break-up is given below:

SN	Particulars	Capital Cost (in Lakh)	Revenue Cost /Year (in Lakh)
1	Air Pollution Prevention measures	244	85
2	Water Pollution Prevention measures	1012	30
3	Conservation measures for schedule-I species	98.12	-
4	Afforestation and Plantation	473.34	46
5	Environmental Monitoring Cost	22	50.31
6	Public Hearing Cost	1507.87	-
7	Need-based CSR Action plan	119	-
Total		**3476.33**	**211.31**

Provision of Final Mine Closure:

i) Land reclamation and enrichment through plantation will be done to bring back the land-use as similar as possible to the pre-mining land as per the mine closure plan.
ii) Around 2579.18Lakh has been provisioned for carrying out progressive and final mine closure activities.

Status of Demand Raised under Common Cause Judgement in respect of Amlo OCP:

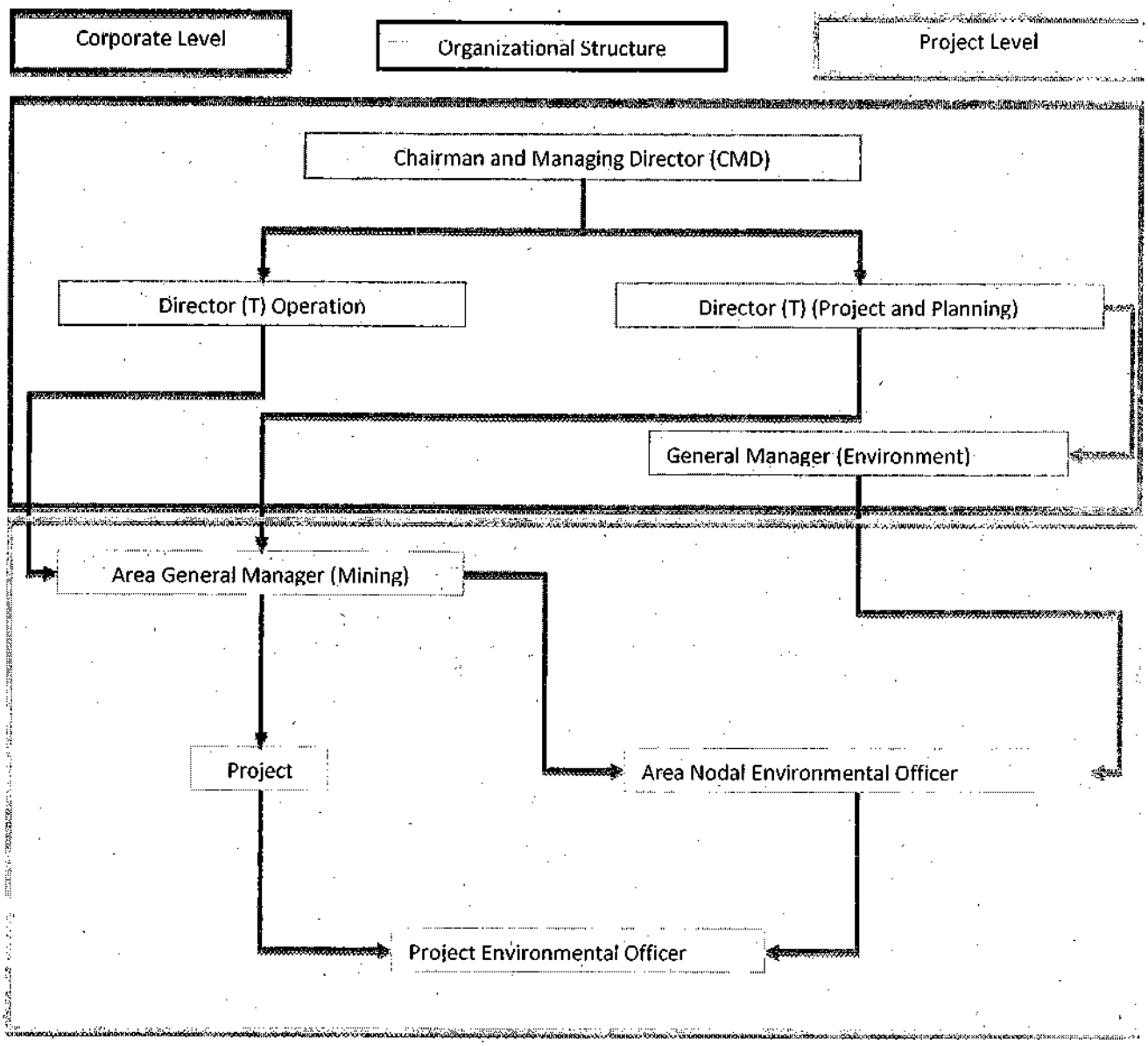
i) Demand Notice was issued for Amlo OCP on 13.12.2017
ii) Revision application (RA Application No.08 of 2018-PCA) in respect of Amlo OCP was filed before Revisional Authority of Ministry of Coal. Hearing for Revision Application held on 16.01.2018 before the Revisional Authority, Coal Tribunal, Ministry of Coal, Government of India and Stay Order for the demand notices was issued on 16.01.2018.
iii) Revisional Authority, Coal Tribunal, Ministry of Coal has set aside the order on 23.07.2024.

Energy Conservation:

i) Solar Plant (50 kW) is proposed to be installed in Amlo OCP for
ii) Other measures include use of LED lights in the mine area during operation.
iii) Periodical maintenance of equipment's, energy audits, optimization of distribution networks Promoting use of renewables and energy efficient appliances in Project and nearby villages.

Environmental Cell & Organization Chart:

The organizational structure for environmental management operates at two levels: Corporate Level (policy formulation and strategic oversight) and Project Level (implementation and compliance). At the corporate level, the CMD, Directors (Tech.), and General Manager (Environment) provide oversight to ensure regulatory adherence. The Project Level, led by the Area General Manager (Mining), includes Project Officers and Environmental Officers responsible for on-site execution. This structure enables effective coordination, compliance with environmental regulations, and sustainable mining practices. An organization chart showing the hierarchy is submitted below:



The latest CCR from IRO, Ranchi dated 24.02.2025 has been submitted. The Action Taken Report for the points which are said to be partially complied has also been submitted.

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 Amlo Expansion Opencast Project (3.00 MTPA to 3.6 MTPA) of M/s Central Coalfields Limited (CCL), Village : Karo, Amlo & Dhori, Tehsil : Bermo, Distt. : Bokaro, Jharkhand (247.59 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – IV 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).

II. 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.

III. 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.

IV. 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.

V. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

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13. **Proposed Gautam Medical College & Hospital of M/s Right Path Foundation at Plot no. 44, Situated at ABD Area of Ranchi Smart City, Village : Kalyanpur, Tehsil : Namkum, Distt. : Ranchi, Jharkhand.**

(Proposal no.: SIA/JH/INFRA2/ 505830 /2024)

Name of the consultant : Ind Tech House Consult, Delhi.

This is a new project which has been taken for appraisal on 10.03.2025.

Project Sector: 8(a) Building and Construction Projects , Category: B2.

Application for Environment Clearance (EC) as per EIA notification, 2006.

The project falls within the Smart city Project of M/s. Ranchi Smart City Corporation Ltd which has already received Environmental Clearance Vide Letter no. EC/SEIAA/2018-

10/2089/2018 Dated 20-06-2019. Plot Area of the project is **33354.60 sqm** and built-up area will be **140973.3 sqm**. The site is earmarked for Semi-public development as pet the Ranchi Smart City Master plan. The latitude and longitude of the centre of the project site are **23°18'15.93"N** and **85°18'26.52"E**.

Salient Features of the Project :

SN	Description	Particulars	Unit
	GENERAL		
1	Plot Area	33354.60	SQM
2	Proposed Built Up Area	140973.3	SQM
3	Number of Building Blocks	5	NOS
4	No of Beds	772	NOS
5	Max Height of Building	52	M
6	Max No of Floors (Girls & Boys Hostel)	B+S+G+13	NOS
7	Cost of Project	435.96	CR
8	Expected Population	7987	PERSONS
9	Permissible Ground Coverage Area (50%)	16677.34	SQM
10	Proposed Ground Coverage Area (32.49%)	10836.17	SQM
11	Permissible FAR Area	116741.38	SQM
12	Proposed FAR Area	110035.03	SQM
13	Non-FAR areas	30938.31	SQM
14	Proposed Total Built Up Area	140973.34	SQM
14a	Capacity of oxygen plant	1000	L/min
	WATER		
15	Total Water Requirement	1106	KLD
16	Fresh water requirement	568	KLD
17	Domestic Waste water to CSTP of Ranchi smart City	600	KLD
18	Waste water to ETP	96.5	KLD
19	Proposed STP Capacity	750	KLD
20	Proposed ETP Capacity	100	KLD
21	Recycled Water	539	KLD
	RAIN WATER HARVESTING		
22	Rain Water Collection Tank	570	CUM
	PARKING		
23	Total Parking required	619	ECS
24	Total Proposed Parking	1709	Nos.
	GREEN AREAS		
25	Required Green Area (10% of the plot area)	3335	SQM
26	Proposed Green Area (16.76% of the plot	5591.44	SQM

SN	Description	Particulars	Unit
	area)		
	WASTE GENERATION		
27	Municipal Solid Waste Generation	2705.78	KG/DAY
28	Bio Degradable waste	1,082.31	KG/DAY
29	Bio Medical Waste	289.5	KG/DAY
30	Quantity of Sludge Generated from ETP	8	KG/DAY
31	Quantity of Sludge Generated from STP	80	KG/DAY
	POWER		
32	Total Power Requirement	3635	kW
33	DG set backup	5550	KVA

Land Details:

At plot no. 44, Situated at Ranchi SmartCity. plot no. as per revenue - 325P,326P,327P,328,329,330,331,332,333,334P,335P,336P,337P,338,339,340P,341,342,343, 344P,345P,347P,351P,399P,400P,402P.

Population Details:

HOSPITAL			**No of Beds**
NO OF BEDS			**772**
RESIDENTIAL (24 Hr Use)	**DU'S**	**POP/DU**	**POPULATION**
Rooms (Service Block) (26X7)	182	2	364
Student HOSTEL (Girls & Boys)		actual	1250
Others		actual	36
TOTAL			**1650**
NON-RESIDENTIAL (8Hrs Use)			
TEACHING/ACADEMIC	**Area**	**Rate**	
ACADEMIC & ADMINISTRATIVE STAFF (Teaching&non teaching staff)	-	actual	185
FACILITY MANAGEMENT - MAINTENANCE (Hospital, Service Block Hostel)		LS	230
TOTAL			**415**
VISITORS (1-1.5 Hrs Use)			
OPD PATIENTS			2400
Other Visitors			2750
TOTAL VISITORS			**5150**
TOTAL POPULATION (including Hospital beds)			**7987**

Floor Wise Built-up area:

Building:A(HOSPITALBUILDING)

Floor		Deductions					

Name	Gross Built-up Area	From Gross BUA(Area in Sq.mt.)	Total Built Up Area (Sq.mt.)	Deductions (Area in Sq.mt.)				Proposed FAR Area (Sq.mt.)	Add Area In FAR (Sq.mt.)	Total FAR Area (Sq.mt.)
		Cutout		Lift	Lift Machine	Void	Parking	Medical	Stair	
Basement Floor...	8144.28	9.44	8134.84	121.89	0.00	0.00	7743.99	0.00	268.95	268.95
Ground Floor...	6245.88	0.00	6245.88	0.00	0.00	495.52	0.00	5750.36	0.00	5750.36
First Floor...	6205.30	0.00	6205.30	98.52	0.00	958.58	0.00	5148.20	0.00	5148.20
Second Floor...	6282.07	0.00	6282.07	98.52	0.00	498.42	0.00	5685.13	0.00	5685.13
Third Floor...	6287.15	0.00	6287.15	98.46	0.00	477.68	0.00	5711.01	0.00	5711.01
Fourth Floor...	6211.13	0.00	6211.13	98.52	0.00	420.64	0.00	5691.97	0.00	5691.97
Fifth Floor...	6211.13	0.00	6211.13	98.52	0.00	420.64	0.00	5691.97	0.00	5691.97
Sixth Floor...	6211.13	0.00	6211.13	98.52	0.00	420.64	0.00	5691.97	0.00	5691.97
Seventh Floor...	6211.13	0.00	6211.13	98.52	0.00	420.64	0.00	5691.97	0.00	5691.97
Eighth Floor...	6211.13	0.00	6211.13	98.52	0.00	420.64	0.00	5691.97	0.00	5691.97
Ninth Floor...	3401.99	0.00	3401.99	24.41	74.12	420.64	0.00	2812.59	70.23	2882.82
Tenth Floor...	3057.69	0.00	3057.69	24.41	0.00	277.83	0.00	2755.45	0.00	2755.45
Terrace Floor...	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total :	70680.01	9.44	70670.57	958.81	74.12	5231.87	7743.99	56322.59	339.18	56661.77
Total Number of Same Buildings :	1									
Total :	**70680.01**	**9.44**	**70670.57**	**958.81**	**74.12**	**5231.87**	**7743.99**	**56322.59**	**339.18**	**56661.77**

Building :B (MEDICAL COLLEGE)

Floor Name	Gross Builtup Area	Deductions From Gross BUA(Area in Sq.mt.)	Total Built Up Area (Sq.mt.)	Deductions (Area in Sq.mt.)	Proposed FAR Area (Sq.mt.)	Total FAR Area (Sq.mt.)
		Cutout		Lift	Medical	

Ground Floor...	1616.26	0.00	1616.26	0.00	1616.26	1616.26
First Floor...	1694.18	360.28	1333.90	28.88	1305.02	1305.02
Second Floor...	1702.17	0.00	1702.17	28.88	1673.29	1673.29
Third Floor...	1694.18	288.75	1405.43	28.88	1376.55	1376.55
Fourth Floor...	1702.17	0.00	1702.17	28.88	1673.29	1673.29
Fifth Floor...	1694.18	301.62	1392.56	28.88	1363.68	1363.68
Sixth Floor...	1774.06	12.87	1761.19	28.88	1732.31	1732.31
Seventh Floor...	1694.18	288.75	1405.43	28.88	1376.55	1376.55
Eighth Floor...	1702.17	0.00	1702.17	28.88	1673.29	1673.29
Ninth Floor...	1702.17	0.00	1702.17	28.88	1673.29	1673.29
Tenth Floor...	1702.17	0.00	1702.17	28.88	1673.29	1673.29
Eleventh Floor...	1702.17	0.00	1702.17	28.88	1673.29	1673.29
Terrace Floor...	306.49	0.00	306.49	0.00	306.49	306.49
Total :	20686.55	1252.27	19434.28	317.68	19116.60	19116.60
Total Number of Same Buildings :	1					
Total :	**20686.55**	**1252.27**	**19434.28**	**317.68**	**19116.60**	**19116.60**

Building :C (SERVICE BLOCK)

Floor Name	Gross Builtup Area	Deductions From Gross BUA(Area in Sq.mt.)	Total Built Up Area (Sq.mt.)	Deductions (Area in Sq.mt.)		Proposed FAR Area (Sq.mt.)	Total FAR Area (Sq.mt.)
		Cutout		Lift	Accessory Use	Commercial	
Ground Floor...	1608.29	9.44	1598.85	0.00	340.48	1258.37	1258.37
First Floor...	1631.04	9.44	1621.60	22.75	340.48	1258.37	1258.37
Second Floor...	1631.04	9.44	1621.60	22.75	340.48	1258.37	1258.37
Third Floor...	1631.04	9.44	1621.60	22.75	340.48	1258.37	1258.37

Fourth Floor...	1631.04	21.81	1609.23	22.75	340.48	1246.00	1246.00
Fifth Floor...	1631.04	21.81	1609.23	22.75	340.48	1246.00	1246.00
Sixth Floor...	1631.04	21.81	1609.23	22.75	340.48	1246.00	1246.00
Seventh Floor...	1631.04	21.81	1609.23	22.75	340.48	1246.00	1246.00
Eighth Floor...	1631.04	21.81	1609.23	22.75	340.48	1246.00	1246.00
Ninth Floor...	1336.77	21.81	1314.96	22.75	46.21	1246.00	1246.00
Tenth Floor...	1336.77	21.81	1314.96	22.75	46.21	1246.00	1246.00
Terrace Floor...	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total :	17330.15	190.43	17139.72	227.50	3156.74	13755.48	13755.48
Total Number of Same Buildings :	**1**						
Total :	**17330.15**	**190.43**	**17139.72**	**227.50**	**3156.74**	**13755.48**	**13755.48**

Building :D (GIRLS BLOCK)

Floor Name	Total Built Up Area (Sq.mt.)	Deductions (Area in Sq.mt.)				Proposed FAR Area (Sq.mt.)	Add Area In FAR (Sq.mt.)	Total FAR Area (Sq.mt.)
		Lift	Void	Accessory Use	Parking	Medical	Stair	
Basement Floor...	5591.43	66.20	2.20	0.00	5362.54	0.00	160.49	160.49
Stilt Floor...	5591.43	66.20	2.20	0.00	5362.54	0.00	160.49	160.49
Ground Floor...	805.09	0.00	18.76	18.53	0.00	767.80	0.00	767.80
First Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Second Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Third Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Fourth Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Fifth Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Sixth	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10

Floor...								
Seventh Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Eighth Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Ninth Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Tenth Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Eleventh Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Twelfth Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Thirteenth Floor...	805.22	18.66	69.46	0.00	0.00	717.10	0.00	717.10
Terrace Floor...	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total :	22455.81	374.98	926.14	18.53	10725.08	10090.10	320.98	10411.08
Total Number of Same Buildings :	1							
Total :	**22455.81**	**374.98**	**926.14**	**18.53**	**10725.08**	**10090.10**	**320.98**	**10411.08**

Building :E (BOYS BLOCK)

Floor Name	Total Built Up Area (Sq.mt.)	Deductions (Area in Sq.mt.)			Proposed FAR Area (Sq.mt.)	Total FAR Area (Sq.mt.)
		Lift	Void	Accessory Use	Medical	
Ground Floor...	805.09	0.00	18.76	18.53	767.80	767.80
First Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Second Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Third Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Fourth Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Fifth Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Sixth Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Seventh Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Eighth Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Ninth Floor...	805.22	18.66	69.46	0.00	717.10	717.10

Tenth Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Eleventh Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Twelfth Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Thirteenth Floor...	805.22	18.66	69.46	0.00	717.10	717.10
Terrace Floor...	0.00	0.00	0.00	0.00	0.00	0.00
Total :	11272.95	242.58	921.74	18.53	10090.10	10090.10
Total Number of Same Buildings :	1					
Total :	**11272.95**	**242.58**	**921.74**	**18.53**	**10090.10**	**10090.10**

Adjacent Features of the Project Site

S. No.	Surrounding Feature	Distance from Project Site	Direction w.r.t. Project Site
1.	Railway Line	68 Meter	E
2.	Sudha Dairy Office	372 Meter	NW
3.	Animal Husbandry Department	672 Meter	NW
4.	Divisional Railway Hospital	377 Meter	NE

Communication Facilities with the Project Site

S.No	Type of Facility	Name of Facility	Distance from Project Site	Direction w.r.t. Project Site
1.	Roads	NH-75	8.03 Km	NE
		SH-1	6.67 Km	NE
		NH-33	7.37 Km	NE
		NH- 23	8.55 Km	NW
		MDR-132	1.28 Km	NW
2.	Railway	Hatia Railway Station	411 Meter	NE
		Ranchi Junction	5.57 Km	NE
		Balasiring Railway Station	4.71Km	SW
3.	Airport	Birsa Munda Airport	1.53 Km	NE

Project Site and Surrounding Area within 500 m Features & Facilities in the Surrounding Area

S.No	Type of Facility	Name of Nearest Facility	Distance & Direction from Project Site

S.No	Type of Facility	Name of Nearest Facility	Distance & Direction from Project Site
1.	Hospital	a) Divisional Railway Hospital b) Summer Hospital & Research Centre Pvt Ltd c) Paras HEC Hospitals d) Darbhanga Hospital e) City Hospital	377 Meter, NE 612 Meter, SE 3.08 Km, NW 628 Meter, SE 4.17 Km, NE
2.	School	1. Greenland Public School 2. Vivekananda Vidya Mandir 3. Kairali School 4. St. Joseph Middle School 5. Sacred Grove School	1.17 Km, SE 1.08 Km,NW 1.70 Km, NW 1.27 Km, SE 1.56 Km, SE
3.	Community Facilities	1. Railway Hockey Stadium 2. Railway Colony Sports Field 3. JSCA International Stadium Complex 4. Sakha Ground 5. HEC Stadium	599 Meter, NE 706 Meter, NE 3.11 Km, NW 1.72 Km, W 1.98 Km, NW
4.	Places of worship	a) St. John's Church b) GEL Church Hesag-Kalyanpur c) Jagannath Mandir d) Shri Shri Panchmukhi Mandir e) Shri Ram Temple	899 Meter, SE 1.08 Km, SE 2.79 Km, NW 2.32 Km, NW 732 Meter, NE
5.	Défense installations	Army Western Cantonment	12.39 Km, NE
6.	State/National boundaries	Not Within 15 Km	-

Details of Parking Facilities

Level of Parking	No. of Parking	
	Proposed	**Required**
Total parking	**1709**	**619**

Power Requirement, Source and Backup Arrangement

Power requirement	3635 kW
Sources of power	JBVNL (Jharkhand Bijli Vitran Nigam Limited) Grid supply
Back-up power supplyarrangement	Back-up DG sets of total capacity 5550 kVA (Also roof top SPV power generation 185 kWp (5 % of power load)is proposed.
Stack height of DG	6m above the terrace level of the building

Water Requirement, Source and Water Balance

Water Requirement during Operation Stage

WATER REQUIREMENT				
	POPULATION/ AREA/UNIT	RATE IN LTS	TOTAL QTY IN KL	Waste Water Generation (KL)
HOSPITAL BEDS		**450**		
HOSPITAL (Multipurpose use)	772	270	208.44	166.752
OT	772	20	15.44	13.896
WARD	772	10	7.72	6.176
FLUSHING	772	150	115.8	115.8
Acute kidney dialysis water			20	18
Lab		LS	5	4.5
LAUNDRY		(4.5 KG/BED) 15 lit per kg	52.11	41.688
KITCHEN - (cooking, washing, utensil wash)	5500	10	55	44
CLINICAL		LS	10	8
Central Sterile Supply Department		LS	20	18
RESIDENTIAL				
DOMESTIC	1650	65	107	85.8
FLUSHING	1650	21	35	35
ACADEMICS				
DOMESTIC	1250	25	31.25	25
FLUSHING	1250	20	25	25
NON RESIDENTIAL (Employees)				
DOMESTIC	415	25	10.375	8.3
FLUSHING	415	20	8	8
VISITORS				
DOMESTIC	5150	5	26	20.6
FLUSHING	5150	10	52	52
	Area in sqm			
GARDENING	5591.44	6	34	0
	TR			
AIR CONDITIONING (MAKE UP)	2000 TR		268.8	0
Total water Requirement			**1105.93**	**696.0**
Fresh water requirement				**568**
Waste water to ETP				**96**
Waste Water to STP				**600**
Proposed ETP Capacity				**100**

Proposed STP Capacity				750
Treated water reused				539
Surplus treated water discharge in CSTP				193

STP / ETP Management Plan:

STP Technology: – MBBR (Moving Bed Biofilm Reactor)

Primary Settlement:

Where larger solids settle into the bottom of the primary tank and are removed periodically as sludge, and where other buoyant materials float upwards to be removed usually by a scraping/screening method.

Secondary Treatment

Raw sewage is introduced into the MBBR Reactor where polyethylene biofilm carriersoperating in mixed motion within an aerated wastewater treatment basin. Each individual bio-carrier increases productivity through providing protected surface area to support the growth of heterotrophic and autotrophic bacteria within its cells.

Tertiary Treatment

The treated water than filtrate through dual media filter and activated carbon filter and then disinfection by UV treatment. Ultrafiltration (UF) is used to remove essentially all colloidal particles (0.01 to 1.0 microns) from water and some of the largest dissolved contaminants.

Parameter	Inlet Characteristics	Outlet Characteristics, Limit discharge as per MoHUA
pH	6.5 to 8.5	6.5-8.5
B.O.D	250 to 450 mg/l	<6 mg/l
Total Suspended Solid	200 to 450 mg/l	<20mg/l
C.O.D	250 mg/l	<50 mg/l
Phosphorous Total		<1 mg/l
Nitrogen Total	-	<10 mg/l
Fecal Coliform (FC) (MPN/100 ml)	-	Desirable100, Permissible 230

ETP Technology: – Physical chemical followed by biological treatment

Preliminary Treatment:

Screening& oil and grease removal: To remove large particles (e.g., bandages, gauze) from wastewater.

Settling: Removing larger solid waste using sedimentation tank

Primary Treatment cum Neutralisation:

This comprises of Flash Mixer and Flocculation tank followed by tube settler settling tank. Lime Alum will be dosed in flash mixer tank and Polyelectrolyte will be dosed in flocculation tank

Secondary Treatment:

Biological Treatment: Involves using microorganisms to break down organic material in the wastewater this will be done through Biological Treatment or reactors. This wastewater will be further routed to settling tank for removal of biological flocs.

Tertiary

The clear water from the settling tank will be further polished in MGF and ACF and disinfected via UV system . The treated water will be used within the project site

Parameter	Inlet Characteristics	Outlet Characteristics,
pH	4 to 10	6.5-8.5
B.O.D	150 -200ppm	< 10 ppm
Total Suspended Solid	200-300ppm	<30 ppm
C.O.D	450-600ppm	<50 ppm
O&G	10ppm max	<1 mg/l

ETP Inlet will comprise of various chemicals like Formaldehyde (CH_2O)Acetaldehyde (CH_3CHO)Butanol (C_4H_9OH), Chlorine (Cl_2)Sodium Hypochlorite (NaClO)Hydrogen Peroxide (H_2O_2)Iodine (I_2)Quaternary Ammonium Compounds (e.g., benzalkonium chloride)Formaldehyde (CH_2O)Alcohol (e.g., Ethanol (C_2H_5OH), Isopropanol (C_3H_7OH)), Acetone (C_3H_6O)Tetrahydrofuran (C_4H_8O), etc

Green Area and Number of Trees

Total Plot area for development: 33354.60 m^2

Type of Green Area	Proposed Green Area (m2)	% of Plot Area
Total green area	5591.44	16.76%%

No. of tree plantation required (1 tree per 80 m^2 of plot area for development) = 33354.60 m^2 plot area / 80 m^2 per tree	416.9
No. of tree plantation proposed	**420**

Sewage Quantity, Treatment, Reuse & Disposal

- Estimated domestic Waste Water Generation: 600 KLD
- 96.5 KLD Effluent will be generated and will be treated in ETP of Capacity 100 KLD and will be discharged to CSTP as per BMW rules.

- Fresh water demand will be sourced from Ranchi smart city. In case of deficiency of fresh water ground water will be used with prior permission from concerned department.
- Domestic sewer will be treated in CSTP of Ranchi smart City having capacity of 16 MLD of MBBR technology.
- 539 KLD treated water will be sourced from CSTP of Ranchi smart City.

Rain Water Harvesting:

PARTICULARS	ROOF TOP AREA
Area (Sq.m.)	10836.17
Runoff coefficient	0.8
Rainfall (m)	1.4
Harvesting potential (cu.m.) yearly	12136.51 m3
Considering that the total Rainfall occurs in 3 Months	134.85 m3 (KLD)
Proposed RWH Tanks Capacity (1day fresh water requirement)	570 m3

Rain Water Collection Tank (1) Of capacity – **570 CUM**

SolidWastesCollection,Recycle &Disposal

S. No	Description	Occupancy/Area	kg/capita/day	Total Solid Waste Generation (kg/day)
1	Hospital beds	772	1.5 kg/day	1158
2	Residential	1650	0.5 kg/day	825
3	Non-Residential Staff	415	0.25 kg/day	103.75
4	Academics / Institution	1250	0.25 kg/day	103.75
5	Visitors	5150	0.1 kg/day	515
6	Landscape Waste	1.38	0.2 kg/acre/day	0.276
	Total Municipal Waste			2705.78
7	Bio-Medical waste		25% of Hospital Bed waste	289.5

S. No.	LIKELY IMPACT	MANAGEMENT / MITIGATIVE MEASURES
1.	During operation phase, waste comprise of municipal waste. It is estimated that approx. 2713.78 kg per day of waste (0.5 kg per capita per day for the residents, 0.1 kg per capita per day for the visitor. 0.25 kg per capita per day for the staff members, whereas 0.2 kg/acre/day is considered for landscape waste) to be generated from project site and STP sludge). Following arrangements will be made at the site in accordance to Municipal Solid Waste (Management and Handling) Rules, 2016	1. The solid waste will be segregated at source & collected. 2. 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. 3. Bio-degradable (will be composted through organic waste converter). 4. Recyclable wastes will be disposed to govt. or SPCB approved third party vendors. 5. 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. 6. The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016 and will be disposed through JSPCB authorized vendor (Adityapur Auto Cluster (AAC). 7. Horticultural Waste is composted and used for gardening purposes.
2.	Total biomedical waste generation per day is 289.5 kg/day	Bio medical waste will be stored in color coded bins and Bio medical waste to be sent to JSPCB authorized agency M/s Bio Genetic Laboratory Pvt. Ltd. for treatment

Medical Oxygen Plant Safety

- Ensure appropriate fire extinguishers are kept nearby and are regularly inspected.
- Keep oxygen cylinders at least several metres from a heat source, open flames, electrical devices, or other possible sources of ignition
- Ensure "no smoking" near oxygen sources in the hospital, the area will be completely scoured and isolated and proper monitoring will be ensured.
- Check that all nearby electrical circuit breakers and devices are in safe working condition and free from sparking to prevent a serious fire occurrence

Energy Conservation Measures

Also roof top SPV power generation 185 kWp (5 % of power load) is proposed.

Environmental Management Plan

Area	Mitigation Measures
	Construction Stage:
Water quality	• Toilet and drinking water facilities for construction workers will be providedby the contractor at the construction site to avoid unhygienic condition atsite. • Mobile Toilets will be used.
Air quality	• Barricades of sufficient height all along the project boundary will be erected top revent dispersion of dust and noise • Regular sprinkling of water on road sand vulnerable are asof the construction site will be carried out for dust suppression. • Properly tuned construction machinery & vehicles in good working condition with low noise & emission will be used and engines will be turnedoff when not in use. DG sets to comply with emission norms & stack heightregulations. • Construction materials will be properly stored at the storage yard with
	proper shades and covers located at the off-site. • Trucks carrying construction materials and debris will be suitably covered by tarpaulin and plastic sheets. • Use of mask by construction workers.
Noise level	• Enclosed/ canopy type DG sets will be used. • Protective gears such as ear mufflers etc. will be provided to construction personnel exposed to high noise levels.
Solid wastes	• Construction wastes will be recycled and excess construction debris will be disposed at designated places in tune with the local norms. • Municipal solid wastes from construction site will be disposed at Nagar Nigam authority designated dumping site through authorized vendors.
Landscape	• Appropriate landscape including plantation of evergreen and ornamental flowering trees, palms, shrubs and ground covers at open spaces within the complex will be done, which would serve the dual purpose of controlling fugitive dust and improving the aesthetics of the area.
Health & Safety	• Personal protective equipments (PPE) and other safety measures will be provided to the construction workers as per occupational safety norms to prevent accidents/ hazards. • First aid and health checkup facility will be provided at the construction site.
Operation Stage:	
Water quality	• Sewage will treat on site STP. • Treated water from onsite STP will be reused for toilet flushing and horticulture. • Regular monitoring of ETP Outlet quality will be carried out as per norms.
Air quality	• Back up DG sets will comply the applicable emission norms. • Adequate stack height for DG sets will be provided as per norms. • Back up DG sets will be used only during power failure. • Regular monitoring of emissions from DG sets and ambient air quality will be carried out as per norms.

Noise level	• DG sets will be installed in the basement to minimize the vibration and impact on ambient noise. • DG room will be treated acoustically as per norms to control the noise from DG sets. • Pumps, Compressors, DG sets etc. will be properly maintained for fuel efficiency and noise control. • Personal protective equipment will be provided to the maintenance staff working in high noise areas.
Solid wastes	• Solid wastes will be segregated into biodegradable & non-biodegradable components. • Biodegradable wastes will be composted in an on-site composting unit and the manure will be used for landscaping. • Non-biodegradable/ recyclable wastes will be disposed at designated dumping site through authorized vendors.
Hazardous waste	• Used/spent oil from DG sets will be temporarily stored in an isolated area with proper marking & restriction and finally sold to registered recyclers as per HW rules.
Rainwater harvesting	• Rain Water Collection Tank (1) Of capacity – 570 CUM
Fire protection	• Adequate fire protection facilities will be installed including fire detectors, fire alarm and fire fighting system as per National Building Code of India. • Fire fighting training & mock drills will be conducted at regular intervals as per norms and safety manual
Landscape	• Proper maintenance of landscape round the year including replacement of the decayed plants.
Health & Safety	• Adequate safety measures will be provided to the maintenance staff complying to the occupational safety manuals to prevent accidents/ hazards. • First aid and health checkup facility will be provided at the building.
Others	• The building will be provided with disabled-friendly design, timber-free construction, energy efficient lighting & ventilation, and control of indoor environment. • Undertaking all necessary pollution control measures to maintain the emissions and discharges within the prescribed/stipulated limits.

PROJECT COST BREAK UP

Project Cost		
Sl.	Items of Expenditure	(in Cr. Rs.)
1	Land & Site Development	40.32
2	Civil & Structural Work	285.14
3	Plant & Machinery	90.00

4	Electricity, Solar Panel, EV Charging Points, Water & Other Utilities	9.00
5	Oxygen Plant	1.50
6	Contigency	10.00
	Total Project Cost	435.96

EnvironmentalManagementBudget:

Environment Budget (Construction Phase)		
COMPONENT	**CAPITAL COST (Rs in Lacs)**	**RECURRING COST (Rs in Lacs)/Annum**
BARRICADING OF CONSTRUCTION SITE	145.38	31.98
DUST MITIGATION MEASURES	1.5	0.25
SITE SANITATION	2	1
MOBILE TOILET	3	1
DISINFECTION/ PEST CONTROL		0.5
LABOUR HEALTH CHECK UP & FIRST AID FACILITY	1	0.5
LABOR WELFARE (canteen, creche,safeacess road - water power, gas)	2.5	1.5
WHEEL WASHING	1	0.5
WASTE STORAGE BINS - LABOUR CAMP/SITE OFFICES	1.5	0.75
TRAFFIC MANAGEMENT SIGNAGES	1.5	0.15
SAFETY TRAINING TO WORKERS		1
ENVIRONMENT MONITORING & 6 MONTHLY COMPLIANCE REPORT OF EC CONDITIONS		2
TOTAL	**159.38**	**41.13**

Environment Budget (Operation Phase)		
COMPONENT	**CAPITAL COST (Rs in Lacs)**	**RECURRING COST (Rs in Lacs)/Annum**
STP /ETP	154	12
RAIN WATER HARVESTING SYSTEM	14	2.10
SOLID WASTE STORAGE BINS & COMPOSTER (Organic Waste Converter	14.79	9.76
HORTICULTURE DEVELOPMENT (TREE PLANTATION & LANDSCAPING)	4.34	1.08
ROOF TOP SPV PLANT	148	0.00

ENVIRONMENT MONITORING & 6 MONTHLY COMPLIANCES OF ENVIRONMENT CLEARANCE CONDITIONS		2.00
TOTAL	**241.13**	**26.94**

ENVIRONMENTAL MANAGEMENT CELL

S. no.	Designation	Responsibility
1.	Trustee / Director	Decision making, allocation of fund and correspondence to State Pollution Control Board & Environment Authority
2.	Senior Environment Expert (Post Graduate in Environment)	Senior Environment Expert will take care for the compliances of all the environment management & take corrective measure if needed. Responsible for environment management and decision making for all environmental issues and report to the Director of the organization.
3.	Junior Environment Expert (Polytechnic Holder)	Involved for day-to-day operation & maintenance of pollution control facilities like OWC, STP, management of Solid waste, hazardous waste etc. and will report to Senior Environment Expert.

Statutory Clearances :

1	Land Docs	:	Land Owner : Right Path Foundation
2	DFO Territorial	:	DFO, Ranchi Forest Division vide letter no. 4273, dated 22.12.2018 and letter no. 3913, dated 17.12.2024 certified that the distance of reserved / protected forest is less than 250 meters from project site.
3	DFO Wildlife	:	DFO, Wildlife Division, Ranchi vide letter no. 1015, dated 27.12.2024 certified that proposed project site is out side Eco Sensitive Zone of Palkot Wildlife Sanctuary.
4	CO certificate	:	The CO, Namkum, Ranchi vide letter no. 29 (ii), dated 07.01.2019 and letter no. 218 (ii), dated 30.01.2025 have mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyan & Register II.

5	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC /EAST /B/ 100824/1271699, dated 22.10.2024 valid up to 21.10.2032.
6	Building Plan approval	:	Conceptual plan submitted.
7	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 6397/Tech./2024, dated 18.09.2024.

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Gautam Medical College & Hospital of M/s Right Path Foundation at Plot no. 44, Situated at ABD Area of Ranchi Smart City, Village : Kalyanpur, Tehsil : Namkum, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –I 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 *"EkPed Ma KeNaam"* 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 construction 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. It is to be achieved by solar panels etc meeting ECBC norms.

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 14001 EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

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14. Chhota Tangrani Stone Deposit of M/s Bhagwati Stone Crusher (Partner : Shri Manoj Kumar), Mauza : Chhota Tangrani, Thana : Saraikela, Distt. : Saraikela – Kharsawan, Jharkhand (1.238 Ha).

(Proposal no.: SIA/JH/MIN/ 527404 /2025)

Name of the consultant : Rian Enviro Private Limited, Patna, Bihar.

This is a new project which has been taken for appraisal on 10.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: **Boulder Stone:32718 Cum Per Annum /88338.60 Tonnes Per Annum**
Morum: Not Present
DG Set: 60 KVA
Mobile Crusher: Not Proposed

PROJECT and LOCATION Details:

Sl.	Parameter		Details
1	Project Name	:	Chhota Tangrani Stone Deposit
2	Lessee:	:	Partner- Shri Manoj Kumar
3	Lease Address	:	Mauza- Chhota Tangrani, Thana No.-321, Anchal- Saraikela,

			District- Saraikela Kharsawan, Jharkhand	
4	Lease Area	:	Ha:1.238 ha	Acres:3.06Acres
5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	40.0 Lakhs	
7	EMP Budget	:	Capital: 11.34Lakhs	Recurring: 6.87 Lakh / year
8	CSR / CER Budget	:	Rs. 80,000	
9	New or Expansion	:	New Project	
10	Mineable Reserves	:	Cu.M.:32718Cu. M.	Tonnes:88338.60 Tonnes
11	Mine Life	:	05 years	
12	Man power	:	15	
13	Water Requirement	:	7.325 KLD=0.15 KLD (Drinking & Domestic Uses) + 2.175 (Plantation) KLD + 5.0 KLD (Dust Suppression).	
14	Water Source	:	From Nearby villages by tankers	
15	DG Set / power	:	60 KVA	
16	Crusher	:	Not Present	
17	Nearest Water Body	:	Kharkai Nadi, approx. 1.09 Km towards SE.	
18	Nearest Habitation	:	Saraikela,approx. 2.58 km towards NE direction.	
19	Nearest Rail Station	:	Mahali Marup Railway Station, approx. 8.01 km towards NNW.	
20	Nearest Air Port	:	Birsa Munda Airport Ranchi, Approx, 91.45 km towards NW. Jamshedpur Airport, approx. 30.33 km towards ENE.	
21	Nearest Forest	:	PF, approx. 3.69 Km towards WSW.	
22	Road & Highways	:	Adityapur Chaibasa Road, NH43, approx. 0.41 km towards SSE.	

CO-ORDINATES

1	Latitude		From 22° 41' 15.3973" N	To 22° 41' 21.0054"N
2	Longitude		From 85° 54' 19.8428"E	To 85° 54' 24.4596"E

LAND DETAILS

Khata no.	Plot no.
18	65 (P)
89	64
73	53 & 54

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Saraikela-Kharsawan vide letter no. 742/M, dated

			23.07.2024.
2	CO	:	The CO, Saraikela vide letter no. 1585, dated 08.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Saraikela-Kharsawan vide letter no. 29/M, dated 07.01.2025 certified that 01 other mining lease area (4.50 Acre) exists within 500 meters radius from proposed project site and total area is 7.56 Acre.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 325, dated 01.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Saraikela Forest Division vide letter no. 1535, dated 18.08.2023 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 Saraikela-Kharsawan District (Sl. no. 01, Page no. 107).
7	Gram Sabha	:	BDO, Saraikela vide letter no. 1051, dated 18.08.2023 informed that Gram Sabha conducted on 04.08.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Saraikela-Kharsawan vide Letter No. 25, dated 07.01.2025.
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 deploy
2	Quarry Area	:	1.238 ha.
3	Waste Generation	:	5 years–17514.85 cum in-situ waste & 7131.85 cum Intercalated Waste
4	Stripping Ratio	:	1:00
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	196-190m AMSL
8	Ground Level Elevation		165m AMSL
9	Ultimate Working	:	171 m AMSL

	Depth		
10	Water Table	:	160 m AMSL
11	Topography of Mine	:	Undulating 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	Overburden in cum	Intercalated waste in C um	Total Waste in Cum
1st	24253.50	66015.41	3450.00	1276.50	4726.50
2nd	24450.15	66015.41	0.00	1286.85	1286.85
3rd	25222.50	68100.75	2565.00	1327.50	3892.50
4th	28861.00	77924.70	4368.00	1519	5887.00
5th	32718.15	88338.60	0.00	1722.00	1722.00
Total	**135505.15**	**366394.86**	**10383.00**	**7131.85**	**17514.85**

Land Use

LAND USE PATTERN			
Pattern of Utilization	**Existing Land use (Ha)**	**At the end of plan period (Ha)**	**At Conceptual period (Ha)**
Excavation	0.0	0.785 (0.052ha area shall be Backfilled, 0.497ha converted in to water reservoir & 0.236ha shall be left as dead benches)	0.785 (0.052ha area shall be Backfilled, 0.497ha converted in to water reservoir & 0.236ha shall be left as dead benches)
Waste Dump	0.0	0.00 (waste dump to be removed and backfilled)	0.00 (waste dump to be removed and backfilled)
Road	0.055	0.0(comes under quarry)	0.0 (comes under quarry)
Infrastructure (Crusher)	0.0	0.0	0.0
Safety Zone Plantation	0.0	0.453	0.453

Total	**0.055**	**1.238**	**1.238**
Unused Area	**1.238**	**0.00**	**0.00**
Total Lease Area	**1.238**		

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Area for green belt in Ha.	No. of plants
1st	0.453	725
2nd	Care & Protection	
3rd		
4th		
5th		
	0.453	**725**

- 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.

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 17514.85 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 8757.43 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 8757.43 cum insitu 10946.78 cum loose & 9304.76 cum compact waste shall be temporary dumped in northern part during first to third year, and during fourth & fifth year the generated waste and waste materials of temporary dump shall be removed and used for backfilling of exhausted part of quarry in southern part and it will cover 0.052ha.

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 suspendedparticles in the pit. Pump having required capacity will be installed to liftaccumulated 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 becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles 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, dischargefrom Soak Pit, if any shall be used for plantation.
- 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.
- 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.

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.

Quantity of HSD/ Fuel consumption per day of Chhota Tangrani 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-07litre/hr) =1*8*7=56 liters	56 liters
3	Tippers	Number of Tippers=01 Diesel consumptionin 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**

Environment Management Plan:

S.NO	Particulars	Annual Budget Provisions (Lakh)	
A)Site Facilities		Capital Cost (In Lakh)	Recurring cost (In Lakh)
1.	a) Cost of Water Rs. 500/Tanker/day (Capacity 5.0 KL x 1 No.) (500X 1 X 300) b) Water sprinkling facility with solar pump / diesel pump	1.0	1.5
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x	2.75	0.15
3	Road Development and Maintenance (Road length approx. 200m, Width 5.0 m.)	2.0	0.4
4.	Plantation over the periphery of the project (725 saplings). 725*40= 0.29 Lakh Tree Guard: 725*100=0.72 Lakhs	1.01	0.2
5	PUC certification of vehicles and maintenance	-	0.10
Sub Total(A)		**6.76**	**2.35**
B)Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with solar	1.0	0.10
2	Toilets 3 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	0.6	0.06
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (15 x 3000)	0.45	0.45
5	Vocational training on mining methods and safe work practices (@twice/year) @ 250 x 2 x 15)	-	0.07
Sub Total(B)		**2.55**	**0.73**
C)Emergency Rescue Plan			
1	Fire Extinguishers (2 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit	1.0	0.01
2	Safety signage and warning boards like sirens, red flags, cones etc	1.0	0.05
Sub Total(C)		**2.0**	**0.06**
D)Solid Waste Management			
1	a) Bins 2 Nos. @ Rs. 1500 each	0.03	0.05
Sub Total(D)		**0.03**	**0.05**
E)Monitoring Program			
1	a) Ambient Air Quality	-	0.90
	b) Water Quality	-	0.80
	c) Noise Quality	-	0.18
	d) Soil Quality	-	0.80

	e) Biodiversity Survey	-	0.50
	f) Socio- Economy Survey	-	0.50
Sub Total(E)		**-**	**3.68**
Grand Total(A+B+C+D+E)		**11.34**	**6.87**

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

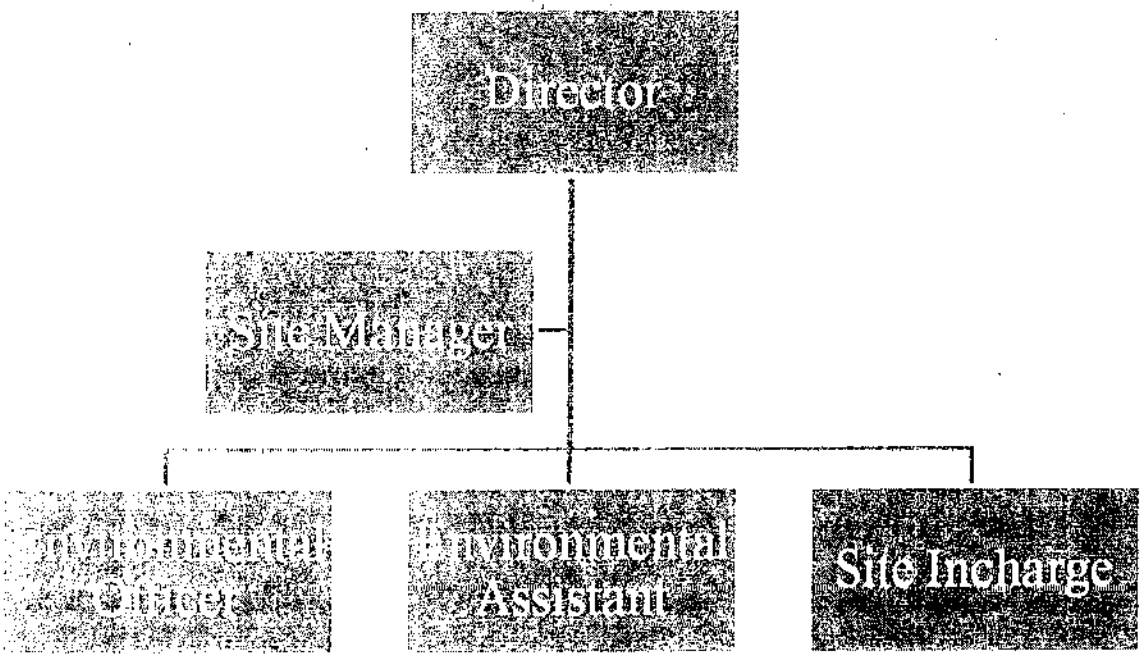
The EMP Cell objectives are:

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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.

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 Chhota Tangrani Stone Deposit of M/s Bhagwati Stone Crusher (Partner : Shri Manoj Kumar), Mauza : Chhota Tangrani, Thana : Saraikela, Distt. : Saraikela – Kharsawan, Jharkhand (1.238 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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. **Amjhora Stone Deposit of M/s Jaiveer and Pawan Kumar Yadav (Partner : Shri Sanjay Kumar Yadav), Mauza : Amjhora, Thana no. : 2, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.784 Ha).**

(Proposal no.: SIA/JH/MIN/ 527181 /2025)

Name of the consultant : Rian Enviro Private Limited, Patna, Bihar.

This is a new project which has been taken for appraisal on 10.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: **Boulder Stone:91530.60 Cum Per Annum /247132.62Tonnes Per Annum**

Morum: Not Present
DG Set: 60 KVA
Mobile Crusher: Not Proposed

PROJECT and LOCATION Details:

Sl.	Parameter		Details	
1	Project Name	:	Amjhora Stone Deposit	
2	Lessee:	:	Partner- Shri Sanjay Kumar Yadav	
3	Lease Address	:	Mauza- Amjhora, Thana No.-02, Thana- Jirwabari, District- Saraikela, Jharkhand	
4	Lease Area	:	Ha:2.784 ha	Acres:6.88Acres
5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	48.0 Lakhs	
7	EMP Budget	:	Capital: 10.67Lakhs	Recurring: 6.36 Lakh / year
8	CSR / CER Budget	:	Rs. 96,000	
9	New or Expansion	:	New Project	
10	Mineable Reserves	:	Cu.M.:91530.60Cu. M.	Tonnes:247132.62Tonnes
11	Mine Life	:	05 years	
12	Man power	:	25	
13	Water Requirement	:	8.979 KLD= 0.25 KLD (Drinking & Domestic Uses) + 3.729 (Plantation) KLD + 5.0 KLD (Dust Suppression).	
14	Water Source	:	From Nearby villages by tankers	
15	DG Set / power	:	60 KVA	
16	Crusher	:	Not Present	
17	Nearest Water Body	:	Ganga River, approx. 9.70 Km towards ENE.	
18	Nearest Habitation	:	Ganga Parshad,approx. 4.52 km towards ENE direction.	
19	Nearest Rail Station	:	Karamtola Railway Station, approx. 2.04 km towards NNE direction.	

20	Nearest Air Port	:	Deoghar Airport, approx. 121.88 km towards SW direction. Birsa Munda Airport Ranchi, Approx, 310.05 km towards SW. (Source: Google earth & Aerial Distance)
21	Nearest Forest	:	Protected Forest, Jani, approx. 0.88 Km towards North. Protected Forest, Lahubera, approx. 3.00 Km towards WNW.
22	Road & Highways	:	NH-33, Approx. 2.04 km towards NE direction.

CO-ORDINATES

1	Latitude		From 25° 14' 04.8972"N	To 25° 14' 14.1726" N
2	Longitude		From 87° 32' 51.0571"E	To 87° 32' 58.9579" F

LAND DETAILS

Khata no.	Plot no.
23, 24, 31, 32 & 33	177, 185 (P), 186, 187, 188 & 190 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 778/M, dated 17.08.2024.
2	CO	:	The CO, Mandro vide memo no. 627/Ra., dated 09.07.2019 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 573/M, dated 09.07.2024 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. 1594, dated 09.08.2019 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide memo no. 1261, dated 05.07.2018 certified that the distance of reserved / protected forest is 255 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. no. 10, Page no. 157).
7	Gram Sabha	:	Gram Sabha conducted on 10.04.2018.

8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Memo No. 906/M, dated 18.09.2024.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 396/M, dated 04.03.2025 certified that the proposed project site is not under of Redzone Grid 1,3,4 & 7.
10	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 deploy
2	Quarry Area	:	2.784 ha.
3	Waste Generation	:	5 years–64682.20 cum in-situ waste &23137.20 cum Intercalated Waste
4	Stripping Ratio	:	1:00
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	164-139 m AMSL
8	Ground Level Elevation		90m AMSL
9	Ultimate Working Depth	:	111 m AMSL
10	Water Table	:	85 m AMSL
11	Topography of Mine	:	Undulating hillocks
12	Explosive Requirement	:	21.26MT/Kg
13	Diesel/Fuel requirement	:	592Litres/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	85434.45	230673.02	24180.00	4496.55	28676.55
2nd	86273.30	232937.91	6325.00	4540.70	10865.70
3rd	88005.15	237613.91	0.00	4631.85	4631.85
4th	91530.60	247132.62	0.00	4817.40	4817.40

5th	88363.30	238580.91	11040.00	4650.70	15690.70
Total	**439606.80**	**1186938.36**	**41545.00**	**23137.20**	**64682.20**

Land Use

LAND USE PATTERN			
Land Utilization	**Existing Land Use (Ha)**	**At the end of plan period (Ha)**	**At Conceptual period (Ha)**
Quarry	NIL	2.077 (0.207 ha area shall be backfilled, 1.102 ha converted into water reservoir & 0.699 ha shall be left as dead benches).	2.077 (0.207 ha area shall be backfilled, 1.102 ha converted into water reservoir & 0.699 ha shall be 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	0.000	0.000
Safety Zone Plantation	NIL	0.777	0.777
Total	**0.000**	**2.784**	**2.784**
Unused Area	**2.784**	**0.000**	**0.000**
Total Lease Area	**2.784**		

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	**Area for green belt in Ha.**	**No. of Plants**
1st Year	0.777	1243
2nd Year	Care & Protection	
3rd Year		
4th Year		
5th Year		
Total	**0.777**	**1243**

- 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.

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 64682.20 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 32341.10 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e.32341.10 cum in situ 40426.38 cum loose & 34362.42 cum compact waste shall be temporary dumped in southern part of the applied lease area, dumping shall be done up to fourth year, during the fifth year the generated waste and waste materials of proposed dump shall be removed and used for backfilling of exhausted part of quarry in western part, which will cover 0.191ha area.

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 suspendedparticles in the pit. Pump having required capacity will be installed to liftaccumulated 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 becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles 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, dischargefrom Soak Pit, if any shall be used for plantation.
- 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.
- 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.

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.

Quantity of HSD/ Fuel consumption per day o

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=02	112liters

		Diesel consumptionin one shift working.(i.e-07litre/hr) =2*8*7=112 liters	
3	Tippers	Number of Tippers=03 Diesel consumptionin one shift working. (I.e-4ltr/hr.) =03*10*4=120	120 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 llters	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			**592**

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	0.4
	b) Cost of Water Rs. 200/Tanker/day (Capacity 3.5 KL x 1 No.) (200X 1 X 300)	-	0.60
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x	2.5	0.15
3	Road Development and Maintenance (Road length approx. 250m, Width 5.0 mt.)	2.0	0.4
4	Plantation over the periphery of the project (1243 saplings). 1243*40= 0.50 Lakh Tree Guard: 1243*100=1.24 Lakhs	1.74	0.5
5	PUC certification of vehicles and maintenance	-	0.10
Sub Total(A)		**7.24**	**2.15**
B) Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with	1.0	0.10
2	Toilets 2 nos. (Rs 25000 x 2)	0.50	0.05
3	Occupational health checkup in a year for 25 workers (@twice/year) @200*2*25 and onsite first aid set-up	0.10	0.10
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (25 x 3000)	0.75	0.05

5	Vocational training on mining methods and safe work practices (@twice/year)@ 250 x 2 x 25)	-	0.12
Sub Total(B)		**2.35**	**0.42**
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	-	0.90
	b) Water Quality	-	0.80
	c) Noise Quality	-	0.18
	d) Soil Quality	-	0.80
	e) Biodiversity Survey	-	0.50
	f) Socio- Economy Survey	-	0.50
Sub Total(E)		-	**3.68**
Grand Total(A+B+C+D+E)		**10.67**	**6.36**

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:

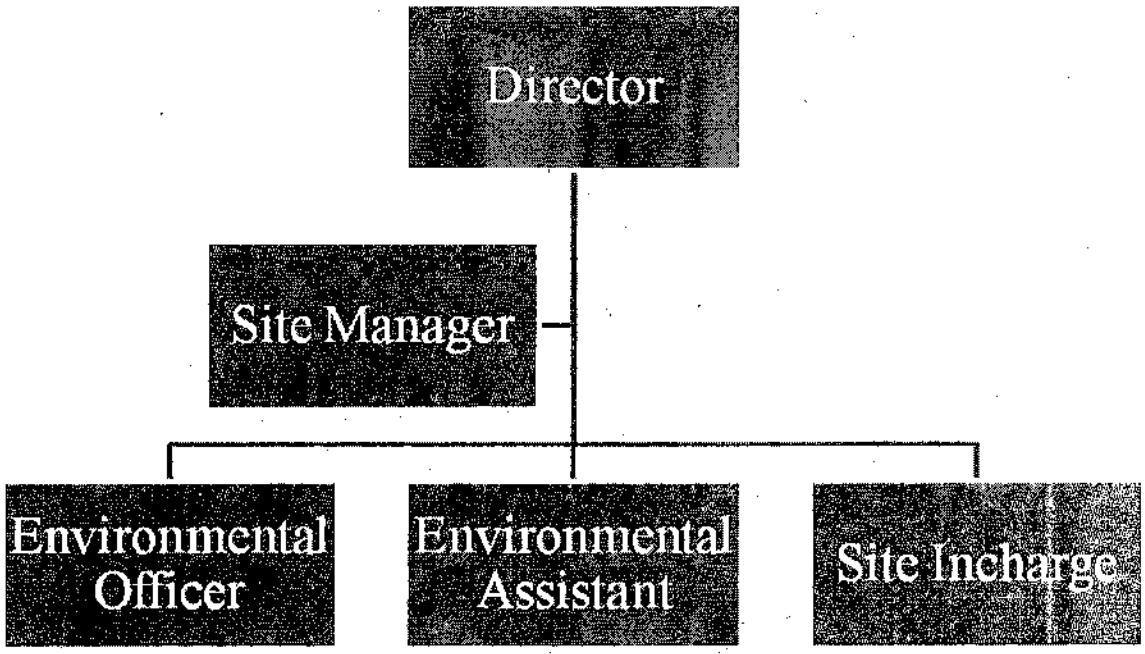
- Minimize environmental impacts on air, water, soil, and biodiversity

- 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)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide 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
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.

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 Amjhora Stone Deposit of M/s Jaiveer and Pawan Kumar Yadav (Partner : Shri Sanjay Kumar Yadav), Mauza : Amjhora, Thana no. : 2, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.784 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 : March 11th, 2025 [Tuesday]

Consideration of Proposals

1. **Kiro Kuriya Stone Deposit of Shri Arjun Yadav, Village : Kiro Kuriya, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.87 Ha).**

   (Proposal no.: SIA/JH/MIN/ 523713 /2025)

   Name of the consultant : P & M Solution, Noida, U.P.

   This is a new project which has been taken for appraisal on 11.03.2025.

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

   Application for Environmental Clearance (EC).

   EC Application for: Proposed Capacity- 11388.00 cum/annum or 307476.00 TPA

   Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kiro Kuriya Stone Deposit	
2	Lessee:	:	Sri Arjun Yadav, S/O- Late Bishwanath Yadav	
3	Lease Address	:	Village – Kiro Kuriya, Thana – Taljhari, District – Sahibganj, State–Jharkhand	
4	Lease Area	:	2.87 ha.	Acres-7.10 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 70.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 19.825 Lakhs	Recurring: 5.07 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1133280 cum	3059856 tonnes
10	Mine Life	:	9.5 or 10 years	
11	Man power	:	34	
12	Water Requirement	:	14.24 ~ 14.50 KLD (Drinking: 0.34 KLD, Dust Suppression: 7.73 KLD, Plantation: 6.17 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	:	Ganga River, Approx. 3.10 km. in North direction of mine site.	
17	Nearest Habitation	:	Kiro Kuriya village approx. 580 meters East direction of mine site	
18	Nearest Railway Station	:	Sakrigali Railway Station, approx 2.07 km in N direction	
19	Nearest Airport	:	Deoghar Airport, approx. 133.19 km towards SW direction	
20	Nearest Forest	:	Open Scrub, Approx. 0.7 km. in NNE direction of mine site. Fairly dense mixed jungle, Approx. 0.3 km. in NE direction of mine	

			site. Protected Forest, Approx. 4.4 km. in SSW direction of mine site..
21	Road & Highways	:	NH-33, Approx. 1.95 km in N direction.

CO-ORDINATES

1	Latitude	:	From 25°13'20.11" N	To 25°13'25.95" N
2	Longitude	:	From 87°42'31.84" E	To 87°42'38.92" E

LAND DETAILS

J.B. no.	Plot no.
4 & 9	42 (P) & 43 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 782/M, dated 17.08.2024.
2	CO	:	The CO, Taljhari vide letter no. 19, dated 08.01.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 833/M, dated 29.08.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 163, dated 22.01.2022 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	DFO, Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 103, dated 12.01.2022 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 Sahibganj District (Sl. no. 14, Page no. 159).
7	Gram Sabha	:	Gram Sabha conducted on 27.12.2020.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 1063/M, dated 05.10.2024.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 313/M, dated 18.02.2025 certified that the proposed project site is not under of Redzone

			Grid 1, 3, 4 & 7.
10	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.87Ha. Or 7.10 Acre	Life of Mine – 10 Years
3	Waste Generation	:	Total 8202 cum of Waste will be generated during the plan period.	
4	Stripping Ratio	:	1: 0.7	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	185 AMSL to 200 AMSL	
8	Ground Level Elevation	:	185 AMSL	
9	Ultimate Working Depth	:	140 AMSL (45 m bgl)	
10	Water Table	:	50-52 AMSL (133-135 m bgl)	
11	Topography of Mine	:	Area represents an undulating topography.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Total Waste in Cum	Bench AMSL
1st Year	104900.00	283230.00	3485.00	200-188
2nd Year	112176.00	302875.20	-	194-182
3rd Year	113880.00	307476.00	-	182-170
4th Year	112736.00	304387.20	4717.00	200-170
5th Year	104276.00	281545.20	-	194-176
Total	**547968.00**	**1479513.60**	**8202.00**	

Land Use

Type of land use	Existing	After End of plan Period	After Life of the Mine

Quarry	0.77	2.38	2.38 (Entire area shall be left as water reservoir)
Mine Road	0.02	Comes under quarry	Comes under quarry
PLANTATION(S.Z.)	-	0.49 (Plantation)	0.49 (Plantation)
Total	0.79	2.87	2.87
Balance	**2.08**	-	-
Total Area	**2.87**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.49 ha	1225
2	Along Approach Road	:	880 m	1760
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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

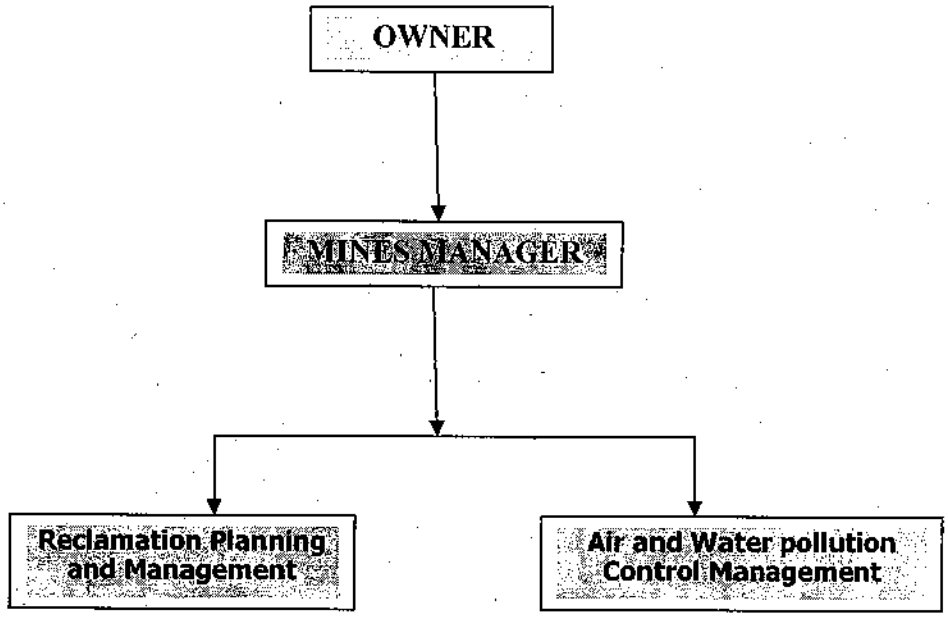
Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	15,42,500	1,20,000
4	Construction and maintenance of haul road	440,000	1,50,000
TOTAL		**19,82,500**	**5,07,000**

Note: *3085 plants *500 Rs (for each plants including hedges and fences) 15.425 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300*300 = 90,000/- or 1,50,000/-
**** 5 lakh per kilometer (500000 *0 .88 km haul road = 440,000/-)***

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

Organization Structure



Solid Waste Management

Total 8202 cum of Waste will be generated during the plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance this Mining Plan & Pmcp period.

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, thereby 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, injuryor 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 Kiro Kuriya Stone Deposit of Shri Arjun Yadav, Village : Kiro Kuriya, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.87 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

2. **Chuwe Stone Deposit of M/s Bandana Stone Works (Prop. : Shri Rakesh Ranjan), Village : Chuwe, Thana : Mandro, Distt. : Sahibganj, Jharkhand (2.14 Ha).**

(Proposal no.: SIA/JH/MIN/ 525208 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 88967.50 cum/annum or 240212.25 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chuwe Stone Deposit	
2	Lessee:	:	M/s Bandana Stone Works, Proprietor- Sri Rakesh Ranjan	
3	Lease Address	:	Mouza- Chuwe Thana- Mandro, District- Sahibganj, State – Jharkhand	
4	Lease Area	:	2.14 ha.	Acres-5.30 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 120.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 21.35 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	888440 cum	2398788.00 tonnes
10	Mine Life	:	9.98 or 10 years	
11	Man power	:	34	
12	Water Requirement	:	15.36~15.40 KLD (Drinking: 0.34 KLD, Dust Suppression: 8.52 KLD, Plantation: 6.50 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	:	Ganga River, approx. 3.0 km towards NNE direction of mine site	
17	Nearest Habitation	:	Teliagarih village approx. 400 meters NE direction of mine site	
18	Nearest Railway Station	:	Mirza Chowki Railway station, approx. 5 km towards NW direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 122 km SW direction	
20	Nearest Forest	:	Fairly dense missed jungle, Approx 2.0 km from mine site in South Direction. PF, Approx 0.30 km from mine site in South Direction.	
21	Road & Highways	:	NH- 33Approx. 1.0 km in NE direction from the mine site.	

CO-ORDINATES

1	Latitude	:	From 25° 14'57.55"N	To 25° 15'04.75" N
2	Longitude	:	From 87° 32'44.35"E	To 87° 32'50.08" E

LAND DETAILS

Khata no.	Plot no.
12	20
23	21
9	22
11	23
2	24 (P)
22	25 (P)
18	32 (P)
17	33 (P)
5	34 (P)
16	35 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 971/M, dated 21.09.2024.
2	CO	:	The CO, Mandro vide memo no. 154/Ra., dated 12.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 188/M, dated 07.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 173, dated 27.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	DFO, Sahibganj Forest Division vide letter no. 194, dated 30.01.2024 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 Sahibganj District (Sl. no. 21, Page no. 162).
7	Gram Sabha	:	Gram Sabha conducted on 01.02.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 194/M, dated 07.02.2025.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.14Ha. Or 5.30 Acre	Life of Mine – 9.98 or 10 Years
3	Waste Generation	:	Total 26797.60 cum waste generated during this mining plan period	
4	Stripping Ratio	:	1: 0.3	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	65 AMSL to 145 AMSL	
8	Ground Level Elevation	:	65 AMSL	
9	Ultimate Working Depth	:	74 AMSL	
10	Water Table	:	25-27 AMSL (38-43 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Waste (cum) in plan period	Waste (cum) in ultimate	Bench AMSL
1st	85688.10	231357.87	5859.90	25232.40	143-116
2nd	88967.50	240212.25	5482.50		122-110
3rd	88671.10	239411.97	5716.90		110-104
4th	86199.20	232737.84	4536.80		104-98
5th	88378.50	238621.95	5201.50		104-92

Total	**437904.40**	**1182341.88**	**26797.60**	**25232.40**	

Land Use

Land Utilization	Existing Land(Hect)	After End of plan Period (Hect)	Land Use pattern after life of the mine (Hect)
QUARRY	**0.21**	**1.66**	**1.66 (entire area converted in to water reservoir.)**
MINE ROAD	**0.14**	**0.01**	**-**
PLANTATION(S.Z.)	**-**	**0.48 (Plantation)**	**0.48 (Plantation)**
Total	**0.35**	**2.08**	**2.14**
BALANCE	**1.79**	**0.06**	**-**
Total	**2.14**	**2.14**	**2.14**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.48 ha	1200
2	Along Approach Road	:	1020 m	2420
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	16,25,000	1,00,000
4	Construction and maintenance of haul road	5,10,000	1,50,000
TOTAL		**21,35,000**	**4,87,000**

Note: *3250 plants * 500 Rs (for each plants including hedges and fences) = 16.25 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-or 1,50,000-(including maintenance)
**** 5 lakh per kilometer (500000 * 1.02 km haul road = 510000/-)***

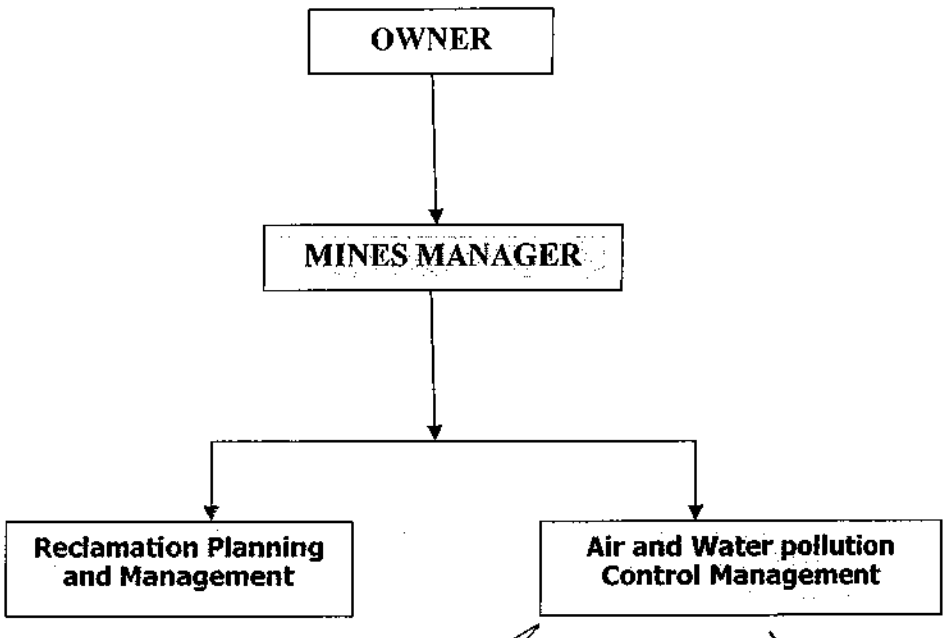
Environment Monitoring Programme

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 26797.60 cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance. Period and ultimate stage total 225232.40 cum waste generated which is used for village & haul 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, thereby 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, injuryor 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

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1	**High Risk**	**1-4**
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Hazard identification & Risk Analysis in Stone mining operation

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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:

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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:

- 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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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.

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- 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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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.

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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.

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 Chuwe Stone Deposit of M/s Bandana Stone Works (Prop. : Shri Rakesh Ranjan), Village : Chuwe, Thana : Mandro, Distt. : Sahibganj, Jharkhand (2.14 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

3. **Pangro Stone Deposit of M/s Bandana Stone Works (Prop. : Shri Rakesh Ranjan), Village : Pangro, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.833 Ha).**

(Proposal no.: SIA/JH/MIN/ 524491 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 89139 cum/annum or 240674 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Pangro Stone Deposit	
2	Lessee:	:	M/s Bandana Stone Works, Proprietor- Sri Rakesh Ranjan	
3	Lease Address	:	Mouza – Pangro, Anchal – Borio, District- Sahibganj, State – Jharkhand	
4	Lease Area	:	2.833 ha.	Acres-7.0 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 120.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 13.30 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	865834.81 cum	2337754 tonnes
10	Mine Life	:	9.7 or 10 years	
11	Man power	:	21	
12	Water Requirement	:	9.81~ 10.00 KLD (Drinking: 0.21 KLD, Dust Suppression: 5.12 KLD, Plantation: 4.48 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	:	Ganga River, Approx. 4.94 km. in North direction of mine site	
17	Nearest Habitation	:	Tetria village approx. 1020 meters WSW direction of mine site	
18	Nearest Railway Station	:	Sahibganj Railway Station, approx 6.91 km in NW direction	
19	Nearest Airport	:	Deoghar Airport, approx. 122 km SW direction	
20	Nearest Forest	:	Protected Forest, Approx. Approx. 3.0 km. in SSW direction of mine site. Protected Forest, Approx. 3.2 km. in SSE direction of mine site. Dense Mixed Jungle, Approx. 4.2 km. in WSW direction of mine site. Fairly Dense Mixed Jungle, Approx. 4.5 km. in ESE direction of mine site. Dense Mixed Jungle, Approx. 4.5 km. in ENE direction of mine site.	

21	Road & Highways	:	SH-18, Approx. 1.65 km in W direction

CO-ORDINATES

1	Latitude	:	From 25°11' 49.1159"	To 25°11' 58.3546"N
2	Longitude	:	From 87°41' 5.9979" E	To 87°41' 13.2335" E

LAND DETAILS

Khata no.	Plot no.
5, 6 & 7	18 (P), 39 (P) & 40 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 740/M, dated 13.08.2024.
2	CO	:	The CO, Borio vide memo no. 728/Ra., dated 05.10.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 187/M, dated 07.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is not under of Redzone Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 87, dated 10.01.2022 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	DFO, Sahibganj Forest Division vide letter no. 769, dated 08.04.2021 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 Sahibganj District (Sl. no. 03, Page no. 154).
7	Gram Sabha	:	CO, Borio vide memo no. 710/Ra., dated 29.09.2021 informed that Gram Sabha conducted on 01.10.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 193/M, dated 07.02.2025.
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	:	2.833 Ha. Or 7.0 Acre	Life of Mine – 9.7 or 10 Years
3	Waste Generation	:	Total 53218 cum in-situ waste shall be generated during this plan period	
4	Stripping Ratio	:	1: 0.5	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	150 AMSL to 105 AMSL	
8	Ground Level Elevation	:	105 AMSL	
9	Ultimate Working Depth	:	78 AMSL (27 m bgl)	
10	Water Table	:	47-50 AMSL (58-55 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	130 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
1st	84332	227695	16610	4439	21049	148-118
2nd	86631	233902	9680	4560	14240	118-106
3rd	86944	234749	5060	4576	9636	106-100
4th	87780	237006	1980	3878	5858	100-88
5th	89139	240674	0	2437	2437	88-76
Total	**434825**	**1174026**	**33330**	**19888**	**53218**	

Land Use

Type of land use	Existing (ha)	After End of plan Period	After Life of the Mine
Quarry	Nil	1.207	2.313 (0.289 ha area shall be backfilled, 2.024 ha area shall be left as water reservoir).
Waste Dump	Nil	0.398	Nil (waste dump to be removed and backfilled)
Road	Nil	0.022	0.00
S.Z. Plantation	Nil	0.520 (Plantation)	0.520 (Plantation)
Total	0.000	2.147	2.833

Unused Area	2.833	0.686	0.0
Total Lease Area	**2.833**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.520 ha	1300
2	Along Approach Road	:	420 m	840
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	11,20,000	1,00,000
4	Construction and maintenance of haul road	2,10,000	1,50,000
TOTAL		**13,30,000**	**4,87,000**

Note: *2,240 plants *500 Rs (for each plants including hedges and fences) = 11.20 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300*300 = 90,000/- or 1,50,000/-
* 5 lakh per kilometer (500000 *0 .42 km haul road = 2,10,000/-)

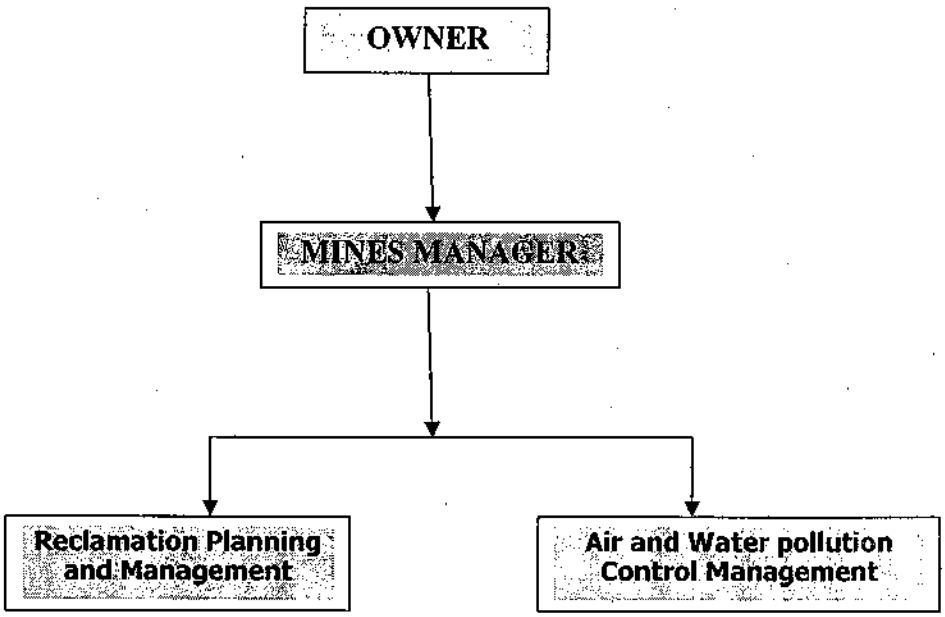
Environment Monitoring Programme

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

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 53218 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 26609 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 26609 cum in situ 33261.25 cum loose & 28272.06 cum compact waste shall be temporary dumped on the northern part of the applied lease area and it will cover about 0.398 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, thereby 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, injuryor 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.

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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)
- Untrained drivers
- Overturning vehicles

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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.
- 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 Pangro Stone Deposit of M/s Bandana Stone Works (Prop. : Shri Rakesh Ranjan), Village : Pangro, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.833 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

4. **Tetaria Stone Deposit of M/s Bandana Stone Works (Prop. : Shri Rakesh Ranjan), Village : Tetaria, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.671 Ha).**

(Proposal no.: SIA/JH/MIN/ 524262 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 116656.00 cum/annum or 314972.00 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Tetaria Stone Deposit	
2	Lessee:	:	M/s Bandana Stone Works, Proprietor- Sri Rakesh Ranjan	
3	Lease Address	:	Mouza – Tetaria , Anchal – Borio, District – Sahibganj, State–Jharkhand	
4	Lease Area	:	2.671 ha.	Acres-6.60 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 70.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 18.75 Lakhs	Recurring: 5.37 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1154557.77 cum	3117306 tonnes
10	Mine Life	:	9.9 or 10 years	
11	Man power	:	21	
12	Water Requirement	:	13.42~ 14.00 KLD (Drinking: 0.21 KLD, Dust Suppression: 7.29 KLD, Plantation: 5.92 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	:	Ganga River, Approx. 4.33 km. in N direction of mine site.	
17	Nearest Habitation	:	Tetria village approx. 1.0 Km SSE direction of mine site	
18	Nearest Railway Station	:	Sahibganj Railway Station, approx 5.83 km in NW direction	
19	Nearest Airport	:	Deoghar Airport, approx. 128.57 km towards NE direction	
20	Nearest Forest	:	Dense Mixed Jungle, Approx. 1.2 km. in E direction of mine site. Dense Mixed Jungle, Approx. 3.7 km. in WSW direction of mine site. PF, Approx. 3.5 km. in SSE direction of mine site. PF, Approx. 4.2 km. in SE direction of mine site. PF, Approx. 3.0 km. in S direction of mine site.	
21	Road & Highways	:	SH-18, Approx. 0.59 km in W direction	

CO-ORDINATES

1	Latitude	:	From 25°12' 2.9294" N	To 25°12' 9.6506"N
2	Longitude	:	From 87°40' 23.9643" E	To 87°40' 30.4606" E

LAND DETAILS

Khata no.	Plot no.
26, 05, 16 & 01	29 (P), 30 (P), 31 (P), 32 (P) & 34 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1370/M, dated 12.12.2024.
2	CO	:	The CO, Borio, Sahibganj vide memo no. 650/Ra., dated 29.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 190/M, dated 07.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1275, dated 27.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 1274, dated 27.06.2024 certified that the distance of notified forest is 280 meters from proposed project site.
6	DSR	:	The project is not specifically mentioned in the approved DSR of Sahibganj District in Chapter 13. DMO, Sahibganj vide letter no. 431, Dated 11.03.2025 requested to consider the said project proposal as part of chapter 13 (LoI Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for consideration for grant of EC. The Committee accepted the request of the DMO, Sahibganj.
7	Gram Sabha	:	Gram Sabha conducted on 18.07.2024.

8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 195, dated 07.02.2025.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.671 Ha. Or 6.60 Acre	Life of Mine – 9.9 or 10 Years
3	Waste Generation	:	Total 73686 cum in-situ waste shall be generated during this plan period	
4	Stripping Ratio	:	1: 0.6	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	167 AMSL to 183 AMSL	
8	Ground Level Elevation	:	167 AMSL	
9	Ultimate Working Depth	:	120 AMSL (47 m bgl)	
10	Water Table	:	97-100 AMSL (67-70 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	120 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
1st	114348	308739	33696	6018	39714	180-168
2nd	112809	304583	9720	5937	15657	168-162
3rd	115117	310816	0	6059	6059	162-156
4th	116195	313725	0	6116	6116	156-144
5th	116656	314972	0	6140	6140	144-132
Total	**575124**	**1552836**	**43416**	**30270**	**73686**	

Land Use

Type of land use	Existing (ha)	After End of plan Period	After Life of the Mine
Quarry	Nil	1.546	2.160 (0.252 ha area shall be backfilled, 1.908 ha area shall be left as water reservoir).
Road	Nil	0.361	Nil (waste dump to be removed and backfilled)

Waste dust	Nil	0.004	0.00
S.Z. Plantaion	Nil	0.511	0.511
Total	0.000	2.422	2.671
Unused Area	2.671	0.249	0.0
Lease Hold Area	**2.671**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.511 ha	1280
2	Along Approach Road	:	790 m	1580
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	14,80,000	1,50,000
4	Construction and maintenance of haul road	3,95,000	1,50,000
TOTAL		**18,75,000**	**5,37,000**

Note: *2960plants *500 Rs (for each plants including hedges and fences) = 14.80 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300*300 = 90,000/- or 1,50,000/-

* 5 lakh per kilometer (500000 *0 .79 km haul road = 3,95,000/-)

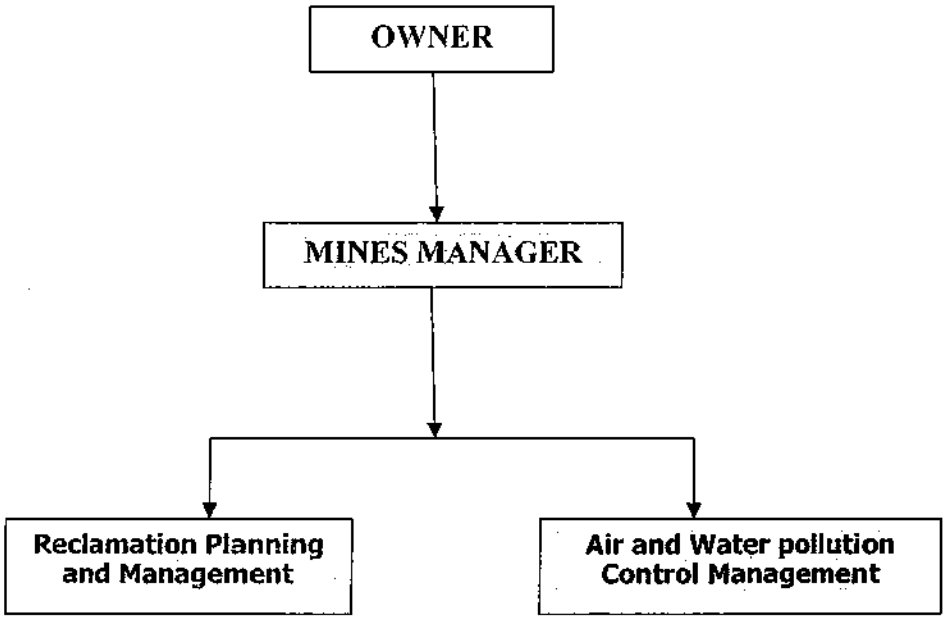
Environment Monitoring Programme

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

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 73686 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 36843 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 36843 cum in situ 46053.56cum loose & 39145.53 cum compact waste shall be temporary dumped on the southern part of the applied lease area and it will cover about 0.316 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, thereby 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, injuryor 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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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.
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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 Tetaria Stone Deposit of M/s Bandana Stone Works (Prop. : Shri Rakesh Ranjan), Village : Tetaria, 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 – II along with following specific conditions :

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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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5. **Chuwe Stone Deposit of M/s Alok Stone (Prop. : Shri Alok Ranjan), Village : Chuwe, Thana : Mandro, Distt. : Sahibganj, Jharkhand (2.75 Ha).**

(Proposal no.: SIA/JH/MIN/ 525101 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 133406.60 cum per year or 360197.82 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chuwe Stone Deposit	
2	Lessee:	:	M/s Alok Stone, Proprietor- Sri Alok Ranjan	
3	Lease Address	:	Mouza- Chuwe Thana- Mandro, District- Sahibganj, State – Jharkhand	
4	Lease Area	:	2.75 ha.	Acres-6.80 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 130.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 20.95 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1333610 cum	3600747.00 tonnes
10	Mine Life	:	9.99 or 10 years	
11	Man power	:	34	
12	Water Requirement	:	15.14~15.20 KLD (Drinking: 0.34 KLD, Dust Suppression: 8.18 KLD, Plantation: 6.62 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	:	Ganga River, approx. 2.5 km towards North direction of mine site	
17	Nearest Habitation	:	Teliagarih village approx. 600 meters NE direction of mine site	
18	Nearest Railway Station	:	Mirza Chowki Railway station, approx. 5.0 km towards West direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 122 km SW direction.	
20	Nearest Forest	:	Fairly dense mixed jungle, Approx. 1.3 km. in SSW direction of mine site.. Protected Forest, Approx. 0.50 km. in SSW direction of mine site	
21	Road & Highways	:	NH- 33 approx. 1.0 km in NE direction from the mine site.	

CO-ORDINATES

1	Latitude	:	From 25°14'52.30" N	To 25° 15'02.79" N
2	Longitude	:	From 87°32'35.91" E	To 87° 32'43.75" E

LAND DETAILS

Khata no.	Plot no.
14	74
10	75 (P)
22	77 (P)
16	78
20	79 (P)
02	80 (P)
09	81 (P)
05	83 (P)
18	84 (P)
23	85 (P)
17	86 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 783/M, dated 17.08.2024.
2	CO	:	The CO, Mandro vide memo no. 153/Ra., dated 12.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 189/M, dated 07.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 174, dated 27.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 193, dated 30.01.2024 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 Sahibganj District (Sl. No. 12, Page no. 158).
7	Gram Sabha	:	Gram Sabha conducted on 01.02.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 192, dated 07.02.2025.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.75Ha. Or 6.80 Acre	Life of Mine – 9.99 or 10 Years
3	Waste Generation	:	Total 40068.55 cum waste generated during this mining plan period	
4	Stripping Ratio	:	1: 0.3	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	72 AMSL to 73 AMSL	
8	Ground Level Elevation	:	72 AMSL	
9	Ultimate Working Depth	:	25 AMSL (47 m bgl)	
10	Water Table	:	15-18 AMSL (54-57 m bgl)	
11	Topography of Mine	:	Area represents an undulating topography.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Waste (cum) in plan period	Waste (cum) in ultimate	Bench AMSL
1st	132432.85	357568.70	7870.15	**36256.45**	130-100
2nd	133406.60	360197.82	8221.40		142-76
3rd	132905.00	358843.50	9995.00		163-136
4th	132658.00	358176.60	6982.00		136-118
5th	133000.00	359100.00	7000.00		118-94

Total	664402.45	1793886.62	40068.55	36256.45	

Land Use

Land Utilization	Existing Land(Hect)	After End of plan Period (Hect)	Land Use pattern after life of the mine (Hect)
QUARRY	1.28	2.11	2.17 (0.42 ha area Backfilled and entire area converted in to water reservoir.)
MINE ROAD	Comes Under quarry		
PLANTATION(S.Z.)	-	0.58 (Plantation)	0.58 (Plantation)
Total	1.28	2.69	2.75
BALANCE	1.47	0.06	-
Total	2.75	2.75	2.75

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.58 ha	1450
2	Along Approach Road	:	880 m	1760
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	16,55,000	1,00,000
4	Construction and maintenance of haul road	4,40,000	1,50,000
TOTAL		**20,95,000**	**4,87,000**

Note: *3310 plants * 500 Rs (for each plants including hedges and fences) = 16.55 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 * 0.88 km haul road = 440000/-)***

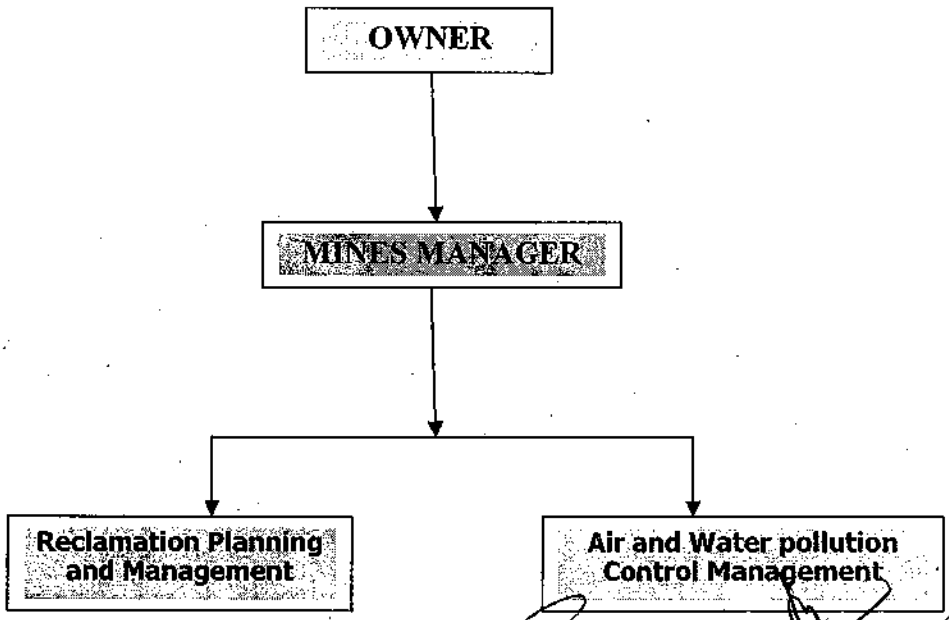
Environment Monitoring Programme

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 40068.55 cum waste generated during this mining plan period which is backfilled into northern side of the exhausted quarry with average area 2226.03 m2 and average depth 18 m. So, there is no requirement of waste dumping Plan for this period and ultimate stage total 36256.00 cum waste generated which is backfilled further in northern side of the exhausted quarry also.

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, thereby 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, injuryor 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 Chuwe Stone Deposit of M/s Alok Stone (Prop. : Shri Alok Ranjan), Village : Chuwe, Thana : Mandro, Distt. : Sahibganj, Jharkhand (2.75 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

6. **Gilamari Stone Deposit of M/s Alok Stone (Prop. : Shri Alok Ranjan), Village : Gilamari, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.83 Ha).**

(Proposal no.: SIA/JH/MIN/ 525184 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is an expansion project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

The Gilamari Stone Deposit has been previously granted for Environment clearance on 16.04.2022 with production capacity 50096 cum/annum or 135259 TPA. Now, the proposal has been applied for the Environment clearance (Expansion, Category B2) under production capacity of 130826 cum/annum or 353231 TPA within same mining lease area.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Gilamari Stone Deposit	
2	Lessee:	:	M/s Alok Stone, Proprietor- Sri Alok Ranjan	
3	Lease Address	:	Village - Gilamari, Anchal- Mandro, District-Sahibganj, State – Jharkhand.	
4	Lease Area	:	2.83 ha.	Acres-7.00 Acres
5	Type of Land	:	Non-Forest (RaiyatiLand)	
6	Project Cost	:	Rs. 130.0Lakhs	
7	EMP Budget	:	Capital: Rs. 12.125 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	Expansion	
9	Mineable Reserves	:	1303931.85 cum	3520616tonnes
10	Mine Life	:	9.9 or 10 years	
11	Man power	:	22	
12	Water Requirement	:	8.81~9.00 KLD (Drinking: 0.22KLD, Dust Suppression: 4.54 KLD, Plantation: 4.05 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	:	Ganga River, Approx. 8.73 km towards ENE direction of mine site.	
17	Nearest Habitation	:	Banchapavillage approx. 420meters west direction of mine site.	
18	Nearest Railway Station	:	Mirza Cheuki Railway station, approx. 4.25 km towards NNW direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 119.00 km towards SW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 1.46 km towards NW direction of mine site. Protected Forest, Approx. 1.54 km towards North direction of mine	

			site. Fairly Dense Mixed Jungle, Approx. 1.0 km towards East direction of mine site.
21	Road & Highways	:	NH- 33, Approx. 4.63 km towards NNW direction.

CO-ORDINATES

1	Latitude	:	From 23°13' 25.81" N	To 23°13' 32.63" N
2	Longitude	:	From 87°31'01.94" E	To 87°31'08.47" E

LAND DETAILS

Khata no.	Plot no.
55	431 (P)
59	432 (P)
14	433 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 20.12.2024 to 19.12.2034
2	CO	:	The CO, Mandro vide memo no. 844, dated 05.09.2019 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 172/M, dated 06.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1787, dated 30.08.2019 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide memo no. 1586, dated 21.08.2018 certified that the distance of forest land is 255 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 34, Page no. 167).
7	Gram Sabha	:	Gram Sabha conducted on 05.07.2018.
8	Mine Plan	:	Approved by District Mining Officer, Sahibganj vide Letter No. 176,

	Approval		dated 06.02.2025.
9	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 173, dated 06.02.2025 certified that production is nil.
10	Previous Environmental Clearance (EC)	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/ 2021-22/2542/2021/22, dated 16.04.2022.
11	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.83 ha. or 7.0 Acres	Life of Mine – 9.9 or 10 Years
3	Waste Generation	:	Total 82050cum in-situ waste shall be generated during this plan period.	
4	Stripping Ratio	:	1: 0.13	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	171 AMSL to 186 AMSL	
8	Ground Level Elevation	:	171 AMSL	
9	Ultimate Working Depth	:	120 AMSL (51 mbgl)	
10	Water Table	:	100-97 AMSL (71-74 mbgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 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
1st Year	130104	351282	38304	6848	45152	180 -174
2nd Year	130249	351672	9424	6855	16279	174 -168
3rd Year	130393	352062	0	6863	6863	162 -156
4th Year	130538	352452	0	6870	6870	156 -150

5th Year	130826	353231	0	6886	6886	150-138
Total	**652110**	**1760698**	**47728**	**34322**	**82050**	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	1.598	2.341 (0.262 ha area shall be Backfilled, 2.079 ha converted shall to water reservoir.)
Waste Dump	0.0	0.637	Nil (waste dump to be removed and backfilled)
Road	0.0	0.003	0.00
Safety Zone	0.0	0.489 (Plantation)	0.489 (Plantation)
Total	0.0	2.727	2.83
Unused Area	2.83	0.103	0.0
Total Lease Area	**2.83**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.489 ha	1225
2	Along Approach Road	:	350 m	700
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	10,12,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**12,12,500**	**4,87,000**

Note: *2025 plants * 500 Rs (for each plants including hedges and fences) = Rs. 10,12,500/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- (including maintenance)

Environment Monitoring Programme

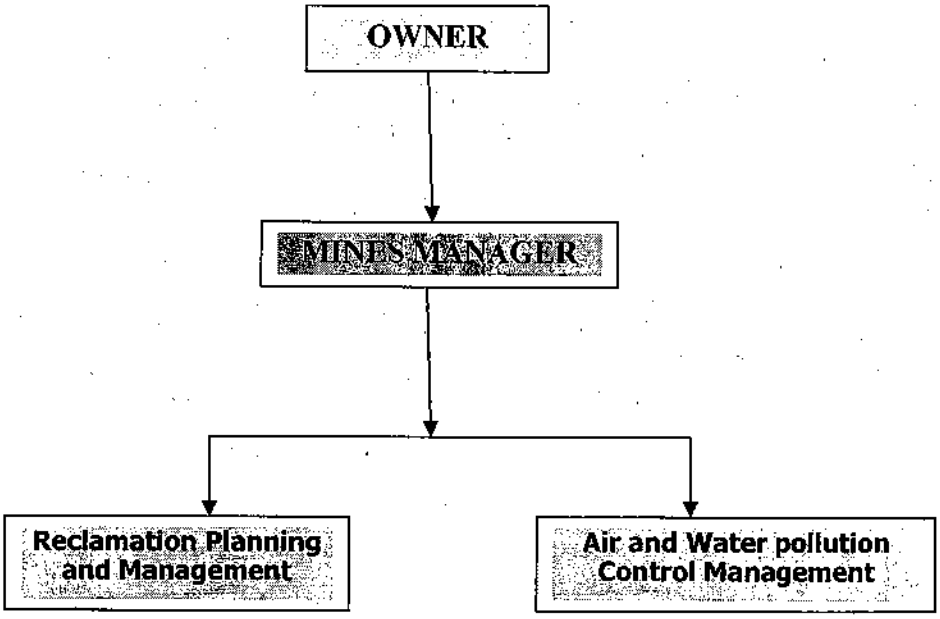
Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

In this applied lease area, the stone deposit is covered with 2m layer of intennixed 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 82050 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 41025 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 41025 cum in situ 51281cum loose & 43588.85cum compact

waste shall be temporary dumped on the northern part of the applied lease area and it will cover about 0.637 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.
I.4	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, thereby 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank	L5 (Very	I.4 (Remote)	L3	L2	L1

(Likelihood x Consequence)	Unlikely)		(Occasional)	(Probable)	(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 Gilamari Stone Deposit of M/s Alok Stone (Prop. : Shri Alok Ranjan), Village : Gilamari, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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7. **Parte Mako Stone Deposit of M/s Kashi Vishwanath Stone Works (Partner : Shri Satish Kumar Pathak), Village : Parte Mako, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.841 Ha).**

(Proposal no.: SIA/JH/MIN/ 524457 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 94525 cum/annum or 255218 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Parte Mako Stone Deposit
2	Lessee:	:	M/s Kashi Vishwanath Stone Works Partner. – Sri Satish Kumar Pathak

			S/o- Sri Ashok Kumar Pathak Address- Vill-Beldiha, P.O.-Ahiro, P.S.- Dhoraiya, District-Banka (Bihar), and Others	
3	Lease Address	:	Village – Parte Mako, Anchal – Borio,District – Sahibganj, State - Jharkhand	
4	Lease Area	:	2.841 ha.	Acres-7.02 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 130.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 19.95 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	927437.40cum	2504081 tonnes
10	Mine Life	:	9.6 or 10 years	
11	Man power	:	21	
12	Water Requirement	:	14.16 ~ 14.20 KLD (Drinking: 0.21 KLD, Dust Suppression: 7.77 KLD, Plantation: 6.18 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	:	Ganga River, approx. 6.29 km towards ENE direction of mine site	
17	Nearest Habitation	:	Asanbani village approx. 0.87 meters SW direction of mine site	
18	Nearest Railway Station	:	Maharajpur Railway station, approx. 5.91 km towards ENE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 128.72 km towards SW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 0.56 km towards North direction of mine site. Protected Forest, Approx. 1.34 km towards SW direction of mine site. Fairly Dense Mixed jungle, Approx. 1.37 km towards SE direction of mine site.	
21	Road & Highways	:	SH- 18, Approx. 1.97 km towards WSW direction.	

CO-ORDINATES

1	Latitude	:	From – 25° 11' 07.6778"	To 25° 11' 15.1538" N
2	Longitude	:	From 87° 41' 28.5684"	To 87° 41' 33.7016" E

LAND DETAILS

Khata no.	Plot no.
4, 17 & 32	33 (P), 34 (P), 94 (P), 95 (P), 96 (P) & 99 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1103/M, dated 09.10.2024.
2	CO	:	The CO, Borio vide memo no. 232/Ra., dated 24.06.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 191/M, dated 07.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1310, dated 28.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 662, dated 11.03.2020 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 Sahibganj District (Sl. No. 30, Page no. 165).
7	Gram Sabha	:	Gram Sabha conducted on 22.03.2020.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 196, dated 07.02.2025.
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	:	2.841 Ha. Or 7.02 Acre	Life of Mine – 9.6 or 10 years
3	Waste Generation	:	Total 40525 cum in-situ waste shall be generated during this plan period.	
4	Stripping Ratio	:	1: 0.8	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	220 AMSL to 240 AMSL	
8	Ground Level Elevation	:	220 AMSL	

9	Ultimate Working Depth	:	175 AMSL (45 m bgl)
10	Water Table	:	140-142 AMSL (78-80 m bgl)
11	Topography of Mine	:	Area represents a small hillock.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	150 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
1st Year	91556	247202	14750	4819	19569	235-217
2nd Year	91675	247523	1375	4825	6200	217-211
3rd Year	92863	250729	0	4888	4888	211-205
4th Year	92981	251049	0	4894	4894	205-199
5th Year	94545	255218	0	4975	4975	193-181
Total	**463600**	**1251720**	**16125**	**24401**	**40525**	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	1.177	2.366 (0.172 ha area shall be Backfilled, 2.194 ha converted shall to water reservoir.)
Waste Dump	0.0	0.319	Nil (waste dump to be removed and backfilled)
Road	0.0	0.005	0.00
Safety Zone (Plantation)	0.0	0.475 (Plantation)	0.475 (Plantation)
Total	0.0	1.976	2.841
Unused Area	2.841	0.865	0
Total Lease Area	**2.841**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.475 ha	1190
2	Along Approach Road	:	900 m	1800
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	15,45,000	1,00,000
4	Construction and maintenance of haul road	4,50,000	1,50,000
TOTAL		**19,95,000**	**4,87,000**

Note: * 3090 plants * 500 Rs (for each plants including hedges and fences) = Rs. 15,45,000/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- (including maintenance)
**** 5.0 lakh per kilometer (500000 * 0.90 km haul road = 4,50,000 /-)***

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly

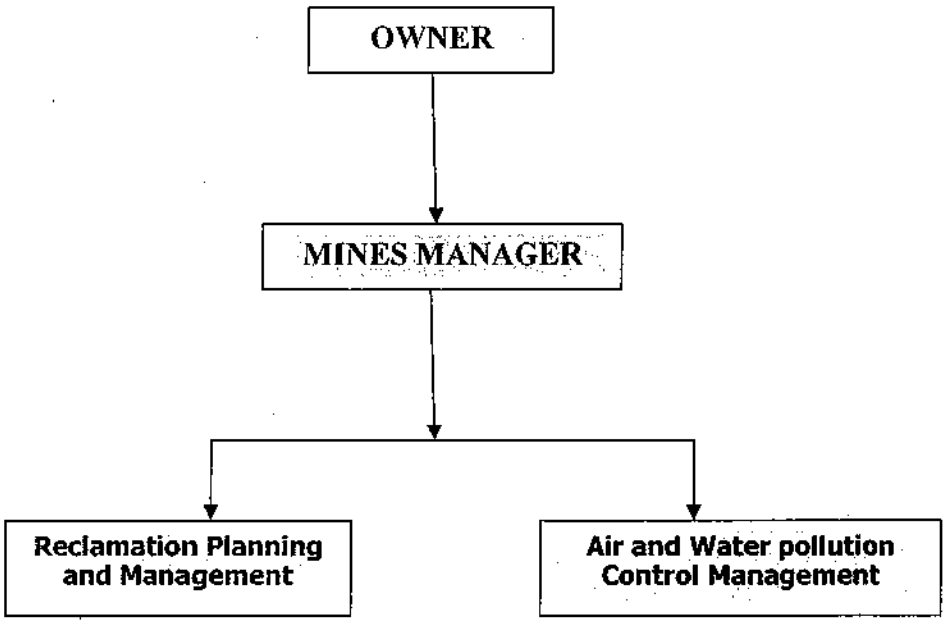
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

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 40525 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 20263 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%)

i.e. 20263 cum in situ 25328.13 cum loose & 21528.91 cum compact waste shall be temporary dumped in north-western part of the applied lease area, and it will cover 0.319 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, thereby 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, injuryor 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 Parte Mako Stone Deposit of M/s Kashi Vishwanath Stone Works (Partner : Shri Satish Kumar Pathak), Village : Parte Mako, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.841 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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. **Bekchuri Stone Deposit of Partner : Shri Sanjay Bharti & Others, Village : Bekchuri, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.02 Ha).**

(Proposal no.: SIA/JH/MIN/ 524739 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 60021.00 cum/annum or 162056.70 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bekchuri Stone Deposit	
2	Lessee:	:	Partner. – Sri Sanjay Bharti, S/o- Sri Gopal Bharti At- Mission School Compound, Thana-Sadar Hazaribag, P.O + Dist.- Hazaribag, State-Jharkhand & Others	
3	Lease Address	:	Village – Bekchuri, Anchal - Taljhari, District – Sahibganj, State - Jharkhand	
4	Lease Area	:	2.02 ha.	Acres-5.0 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 80.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 14.37 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	599,877.5 cum	1619669.25 tonnes
10	Mine Life	:	9.99 or 10 years	
11	Man power	:	34	
12	Water Requirement	:	10.64 ~ 11.0 KLD (Drinking: 0.34 KLD, Dust Suppression: 5.55 KLD, Plantation: 4.75 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	:	Ganga River, approx. 7.97 km towards NE direction.	
17	Nearest Habitation	:	Bansbhaiya village approx. 0.60 meters NE direction of mine site.	
18	Nearest Railway Station	:	Kalian Chak Railway station, approx. 4.25 km towards ESE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 121.40 km towards WSW direction.	
20	Nearest Forest	:	Protected Forest, approx. 0.89 km towards ESE direction of mine site. Protected Forest, approx. 1.34 km towards SE direction of mine site. Protected Forest, approx. 1.54 km towards NE direction of	

			mine site.
21	Road & Highways	:	NH-33, Approx. 2.23 km towards ENE direction.

CO-ORDINATES

1	Latitude	:	From 25° 03' 29.679"N	To 25° 03' 33.866" N
2	Longitude	:	From 87° 42' 04.489" E	To 87° 42' 14.921" E

LAND DETAILS

Plot no.
2 (P) & 111 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1150/M, dated 10.10.2024.
2	CO	:	The CO, Taljhari vide letter no. 604/Ra., dated 27.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 421/M, dated 07.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2589, dated 08.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2588, dated 08.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The project is not specifically mentioned in the approved DSR of Sahibganj District in Chapter 13. DMO, Sahibganj vide letter no. 431,. Dated 11.03.2025 requested to consider the said project proposal as part of chapter 13 (LoI Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for consideration for grant of EC. The Committee accepted the request of the DMO, Sahibganj.

7	Gram Sabha	:	Gram Sabha conducted on 26.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 257, dated 13.02.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 290/M, dated 15.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.02 Ha. or 5.0 Acre	Life of Mine – 9.99 or 10 years
3	Waste Generation	:	Total 15653.05cum waste shall be generated during this plan period.	
4	Stripping Ratio	:	1: 0.5	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	275 AMSL to 310 AMSL	
8	Ground Level Elevation	:	275 AMSL	
9	Ultimate Working Depth	:	250 AMSL (25 m bgl)	
10	Water Table	:	45-47 AMSL (228-230 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Total Waste in Cum	Bench AMSL
1st Year	58192.25	157119.08	3062.75	296-286
2nd Year	60021.00	162056.70	3159.00	286-280
3rd Year	59637.20	161020.44	3138.80	280-274
4th Year	59964.00	161902.80	3156.00	280-268
5th Year	59593.50	160902.45	3136.50	274-262
Total	**297407.95**	**803001.47**	**15653.05**	-

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	0.97	1.51 (0.33ha area shall be left as waterreservoir for rain water harvesting)
Mine Road	0.0	Comes under quarry	
Safety Zone(Plantation)	0.0	0.51 (Plantation)	0.51 (Plantation)
Total	0.0	1.48	2.02
Unused Area	2.02	0.54	0
Total Lease Area	**2.02**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.51 ha	1275
2	Along Approach Road	:	500 m	1000
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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

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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	11,87,500	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
TOTAL		**14,37,500**	**4,87,000**

Note: * 2375 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,87,500/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- (including maintenance)
**** 5.0 lakh per kilometer (500000 * 0.50 km haul road = 2,50,000/-)***

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1	Air	4 Stations	6 Monthly
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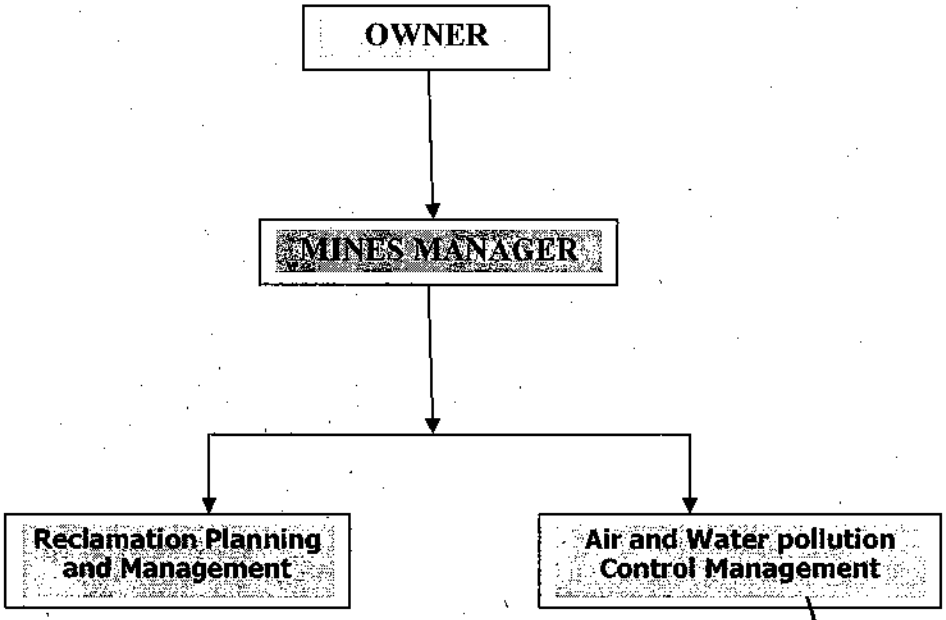
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 15653.05 cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance.

The overburden consists of weathered rock and intermixed with soil. The thickness of overburden is approx.1m. Below overburden, hard, massive, compact rock is exposed from where 95% recovery of rock is considered rest 5% intercalated waste.

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, thereby 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, injuryor 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 Bekchuri Stone Deposit of Partner : Shri Sanjay Bharti & Others, Village : Bekchuri, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.02 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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. **Bekchuri Stone Deposit of M/s Maa Ambika Minerals Pvt. Ltd., Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.85 Ha).**

(Proposal no.: SIA/JH/MIN/ 525930 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 110040.00 cum/annum or 297108.00 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bekchuri Stone Deposit	
2	Lessee:	:	Maa Ambika Minerals Pvt. Ltd. Director- Sri Subrato Pal S/o-Sri Jitendra Nath Pal At-Near of Main Road Bus Stand, P.O.+P.S.-Barharwa, District-Sahebganj, State- Jharkhand	
3	Lease Address	:	Village – Bekchuri, Anchal - Taljhari, District – Sahibganj, State - Jharkhand	
4	Lease Area	:	2.85 ha.	Acres- 7.05 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 130.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 19.85 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1179520 cum	3184704.00 tonnes
10	Mine Life	:	10.71 years	
11	Man power	:	34	
12	Water Requirement	:	14.30 KLD (Drinking: 0.34 KLD, Dust Suppression: 7.70 KLD, Plantation: 6.26KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Ganga River, approx. 8.50 km towards ENE direction.	
17	Nearest Habitation	:	Bansbhaiya village approx. 0.61 meters NE direction of mine site.	
18	Nearest Railway Station	:	Kalian Chak Railway station, approx. 3.60 km towards ESE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 121.0 km towards SW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 1.0 km towards NNE direction of mine site. Protected Forest, Approx. 3.0 km towards NE direction of mine site. Protected Forest, Approx.2.50 km towards South direction of mine	

			site. Protected Forest, Approx 2.40 km from mine site in North Direction.
21	Road & Highways	:	NH-33, Approx. 7.56 km towards ENE direction.

CO-ORDINATES

1	Latitude	:	From 25° 03' 05.07" N	To 25° 03' 11.94" N
2	Longitude	:	From 87° 42' 20.15" E	To 87° 42' 28.09" E

LAND DETAILS

Khata no.	Plot no.
03	25 (P), 52 (P) & 53 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 777/M, dated 17.08.2024.
2	CO	:	The CO, Taljhari vide letter no. 455, dated 16.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 892/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 –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1484, dated 01.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 1483, dated 01.07.2024 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 Sahibganj District (Sl. no. 37, Page no. 168).
7	Gram Sabha	:	Gram Sabha conducted on 10.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 847, dated 30.08.2024.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 204, dated 07.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 &

			7.
10	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.85 Ha. or 7.05 Acre	Life of Mine – 10.71 years
3	Waste Generation	:	Total 1440.00 cum in-situ waste shall be generated during this plan period.	
4	Stripping Ratio	:	1: 0.5	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	135 AMSL to 180 AMSL	
8	Ground Level Elevation	:	135 AMSL	
9	Ultimate Working Depth	:	112 AMSL (83 m bgl)	
10	Water Table	:	50-52 AMSL (83-85 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Total Waste in Cum	Bench AMSL
1st Year	106200.00	286740.00	106200.00	180-172
2nd Year	108360.00	292572.00	108360.00	172-166
3rd Year	110040.00	297108.00	110040.00	166-160
4th Year	109668.00	296103.60	109668.00	160-154
5th Year	109008.00	294321.60	109008.00	154-148
Total	**543276.00**	**1466845.20**	**1440.00**	-

Land Use

Land Utilization	Existing Land (Hect.)	After End of plan Period (Hect.)	Land Use pattern after life of the mine (Hect.)
Quarry	-	2.12	2.30 (Entire area converted

			to water reservoir.)
Mine Road	0.05	0.01	0.01
Safety Zone (Plantation)	-	0.54	0.54
Total	0.05	2.67	2.85
Balance	2.80	0.18	-
Total lease area	**2.85**	**2.85**	**2.85**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.54 ha	1680
2	Along Approach Road	:	840 m	1680
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	15,65,000	1,00,000
4	Construction and maintenance of haul road	4,20,000	1,50,000
TOTAL		**19,85,000**	**4,87,000**

Note: * 3130 plants * 500 Rs (for each plants including hedges and fences) = 15.65 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 * 0.84 km haul road = 420000/-)***

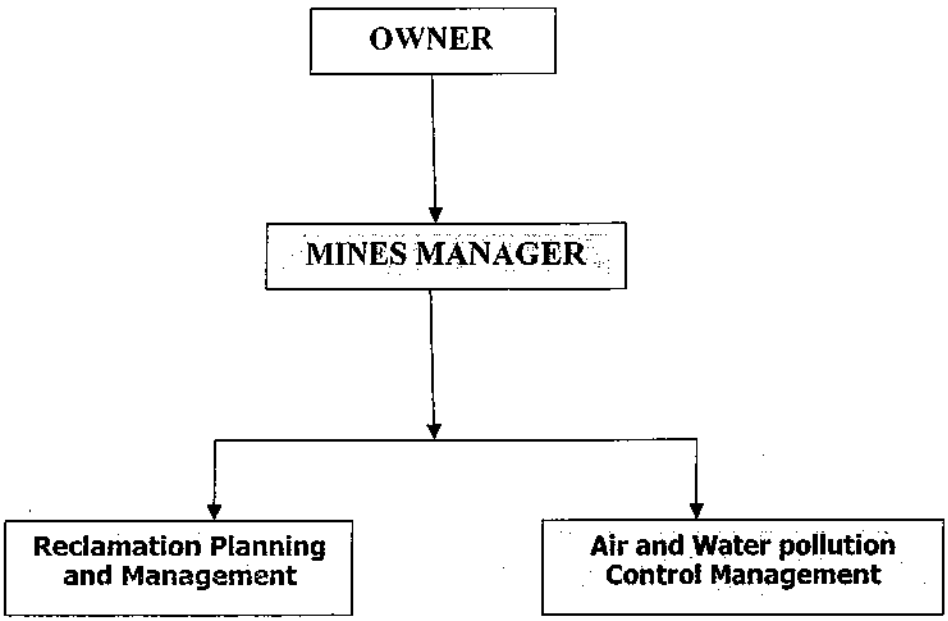
Environment Monitoring Programme

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 1440.00 cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul 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.
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Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
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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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Hazard identification & Risk Analysis in Stone mining operation

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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°
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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.

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 Bekchuri Stone Deposit of M/s Maa Ambika Minerals Pvt. Ltd., Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.85 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

10. Bekchuri Stone Deposit of M/s Natural Mining and Construction Pvt. Ltd. (Director : Shri Subrata Paul), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.954 Ha).

(Proposal no.: SIA/JH/MIN/ 525536 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 83610.00 cum/annum or 225746.00 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bekchuri Stone Deposit	
2	Lessee:	:	M/s Natural Mining And Construction Pvt Ltd Director- Sri Subrata Paul At· Main Road Near Bus Stand, Po+Ps Barharwa, District· Sahibganj, Jharkhand	
3	Lease Address	:	Village – Bekchuri, Anchal - Taljhari, District – Sahibganj, State - Jharkhand	
4	Lease Area	:	2.954 ha.	Acres- 7.30 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 90.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 21.65 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	821788.14 cum	2218828 tonnes
10	Mine Life	:	9.8 ~ 10 years	
11	Man power	:	34	
12	Water Requirement	:	15.491~ 15.50 KLD (Drinking: 0.22 KLD, Dust Suppression: 8.45KLD, Plantation: 6.82 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	:	Ganga River, approx. 8.24 km towards ENE direction.	
17	Nearest Habitation	:	Bansbhaiya village approx. 0.78 meters NE direction of mine site.	
18	Nearest Railway Station	:	Kalian Chak Railway station, approx. 4.30 km towards SE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 121.40 km towards SW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 1.2 km towards NE direction of mine site. Protected Forest, Approx. 3.3 km towards ENE direction of mine	

			site. Protected Forest, Approx. 1.5 km towards SE direction of mine site. Protected Forest, Approx. 3.54 km towards SSE direction of mine site.
21.	Road & Highways	:	NH-33, Approx. 7.81 km towards ENE direction.

CO-ORDINATES

1	Latitude	:	From 25° 03' 20.799" N	To 25° 03' 28.447" N
2	Longitude	:	From 87° 42' 3.796" E	To 87° 42' 13.034" E

LAND DETAILS

Khata no.	Plot no.
03 & 01	04 (P), 5 (P), 112 (P), 125 (P) & 126 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1107/M, dated 09.10.2024.
2	CO	:	The CO, Taljhari vide letter no. 543, dated 20.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1157/M, dated 18.10.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2271, dated 18.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2270, dated 18.09.2024 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 Sahibganj District (Sl. no. 33, Page no. 167).
7	Gram Sabha	:	Gram Sabha conducted on 16.08.2024.
8	Mine Plan	:	Approved by District Mining Officer, Sahibganj vide Letter No.

	Approval		1384, dated 14.12.2024.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 203, dated 07.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	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	:	2.954 Ha. or 7.30 Acre	Life of Mine – 9.8 or 10 years
3	Waste Generation	:	Total 61302 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.5	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	210 AMSL to 284 AMSL	
8	Ground Level Elevation	:	210 AMSL	
9	Ultimate Working Depth	:	180 AMSL (30 m bgl)	
10	Water Table	:	162-165AMSL (45-48 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Total Waste in Cum	Bench AMSL
1st Year	80152	216409	31909	276-258
2nd Year	80893	218410	11668	252-246
3rd Year	81510	220077	8970	246-240
4th Year	82745	223412	4355	240-228
5th Year	83610	225746	4401	228-216
Total	**408909**	**1104053**	**61302**	-

Land Use

Land Utilization	Existing Land use	At the end of	At Conceptual period

	(Ha.)	plan period (Ha)	(Ha)
Quarry	0.0	1.326	2.367 (0.233ha area shall backfilled, 2.133 ha area shall be left as water reservoir.
Waste Dump	0.0	0.383	Nil (waste dump to be removed and backfilled)
Mine Road	0.0	0.010	0.00
Safety Zone (Plantation)	0.0	0.587 Plantation	0.587 Plantation
Total	0.0	2.306	2.954
Unused Area	2.954	0.648	0
Total Lease Area	**2.954**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.587 ha	1470
2	Along Approach Road	:	920 m	1840
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	17,05,000	1,00,000
4	Construction and maintenance of haul road	4,60,000	1,50,000
TOTAL		**21,65,000**	**4,87,000**

Note: * 3408 plants * 500 Rs (for each plants including hedges and fences) = 17.05 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 * 0.92 km haul road = 460000/-)***

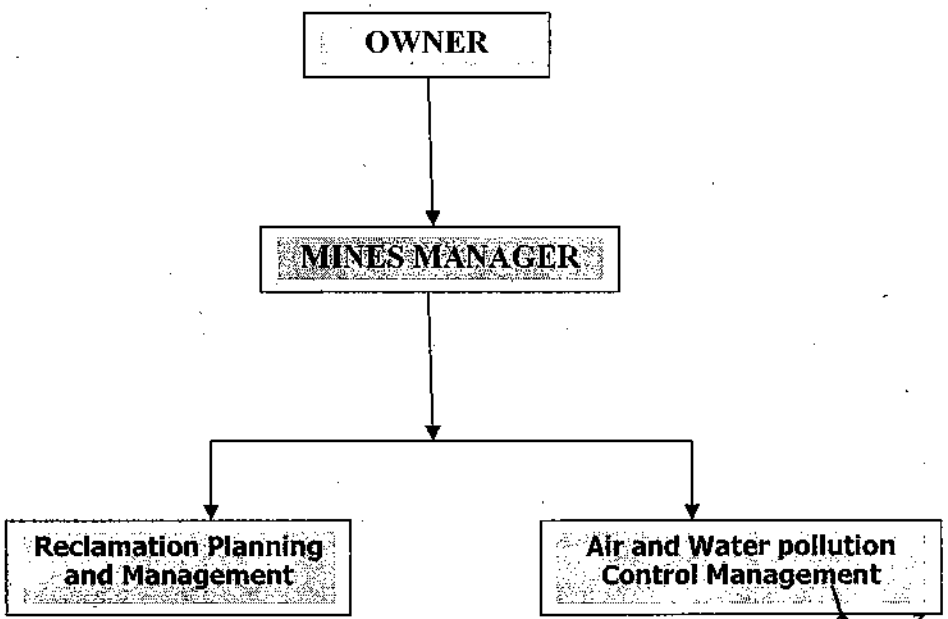
Environment Monitoring Programme

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

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 61302 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 30650.75 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e.30650.75 cum in situ 38313.44 cum loose & 32566.42 cum compact waste shall be temporary dumped in southern part of the applied lease area, dumping shall be done up to fifth year of plan period of the applied lease area which will cover 0.383 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, thereby 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, injuryor 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

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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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- 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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- 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 Bekchuri Stone Deposit of M/s Natural Mining and Construction Pvt. Ltd. (Director : Shri Subrata Paul), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.954 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

11. **Bekchuri Stone Deposit of M/s Bekchuri Stone Works (Partners : Mr. Shahjahan Ansari & Md. Shahid Ansari), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (1.94 Ha).**

(Proposal no.: SIA/JH/MIN/ 526233 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 75549.7 cum/annum or 203984.19 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bekchuri Stone Deposit	
2	Lessee:	:	M/s Bekchuri Stone Works Partner1. - Shahjahan Ansari S/o Md Kutubuddin Ansari at Village - Bishanpur, PO & PS – Taljhari, District - Sahibganj, State - Jharkhand – 816129 Partner 2. –Md Shahid Ansari S/o Md Hafizullah Ansari at Village & PO –Bara Mandansahi, District - Sahibganj, State - Jharkhand – 816109	
3	Lease Address	:	Village – Bekchuri, Anchal - Taljhari, District – Sahibganj, State - Jharkhand	
4	Lease Area	:	1.94 ha.	Acres- 4.80 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 110.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 15.31 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	754775 cum	2037892.50 tonnes
10	Mine Life	:	10 years	
11	Man power	:	30	
12	Water Requirement	:	11.13-11.20 KLD (Drinking: 0.20 KLD, Dust Suppression: 6.12 KLD, Plantation: 4.81 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	:	Ganga River, approx. 7.87 km. in NE direction of mine site.	
17	Nearest Habitation	:	Bansbhaiya village approx. 0.27 meters NE direction of mine site.	
18	Nearest Railway Station	:	Kalian Chak Railway station, approx. 3.22 km towards ESE direction.	

19	Nearest Airport	:	Deoghar Airport, approx. 121.0 km towards SW direction.
20	Nearest Forest	:	Protected Forest, Approx. Approx. 2.50 km. in NE direction of mine site. Protected Forest, Approx. 2.5 km. in North direction of mine site. Protected Forest, Approx. 3.0 km. in North direction of mine site.
21	Road & Highways	:	NH-33, approx. 121 km SW direction.

CO-ORDINATES

1	Latitude	:	From 25°03'07.31" N	To 25°03'12.95" N
2	Longitude	:	From 87°42'37.87" E	To 87°42'44.28" E

LAND DETAILS

Khata no.	Plot no.
09 & 10	81 (P), 84 (P) & 92 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 159/M, dated 05.02.2025.
2	CO	:	The CO, Taljhari vide letter no. 778, dated 19.12.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 277/M, dated 13.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2328, dated 23.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2395, dated 28.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The LoI was granted on 05.02.2025. The DSR for Sahibganj was approved by the Sub-Divisional Committee on 21.12.2024 and submitted to SEIAA for approval on 16.01.2025.

			However, this project lies within the potential village in the approved DSR of Sahibganj District (Sl. No. T_PZ_1, Page no. 192).
7	Gram Sabha	:	Gram Sabha conducted on 12.12.2020.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 349, dated 20.02.2025.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.94 Ha. or 4.80 Acre	Life of Mine –10 years
3	Waste Generation	:	Total 20969.95 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.5	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	130 AMSL to 180 AMSL	
8	Ground Level Elevation	:	130 AMSL	
9	Ultimate Working Depth	:	102 AMSL (28 m bgl)	
10	Water Table	:	15-18 AMSL (54-57 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Intercalated Waste (cum)	Overburden (cum)	Total Waste	Bench AMSL
1st	72233.25	195029.78	3801.75	556	4357.75	180-162
2nd	75549.7	203984.19	3976.30	385	4361.30	168-156
3rd	75126	202840.20	3954.00	171	4125.00	156-144
4th	74687.1	201655.17	3930.90	158	4088.90	150-138
5th	73568	198633.60	3872.00	165	4037.00	144-132
Total	**371164.1**	**1002143**	**19534.95**	**1435**	**20969.95**	-

Land Use

Type of land use	Existing (ha)	During Plan Period (ha)	During Conceptual Period
Quarry	Nil	1.38	1.54 (entire area will be converted into water reservoir)
Infrastructure	Nil	0.01	Nil
MineRoad	Nil	Under quarry	Under quarry
Garland drain	Nil	0.05	Nil
Safety Zone (Greenbelt)	Nil	0.40 (Plantation)	0.40 (Plantation)
Settling Tank	Nil	0.01	Nil
Total	Nil	1.85	1.94
Balance	1.94	0.09	-
Total lease area	**1.94**	**1.94**	**1.94**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.40 ha	1308
2	Along Approach Road	:	654 m	1308
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	12,04,000	1,00,000
4	Construction and maintenance of haul road	3,27,000	1,50,000
TOTAL		**15,31,000**	**4,87,000**

Note: * 2408 plants * 500 Rs (for each plants including hedges and fences) = 12.04 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 * 0.654 km haul road = 327000/-)***

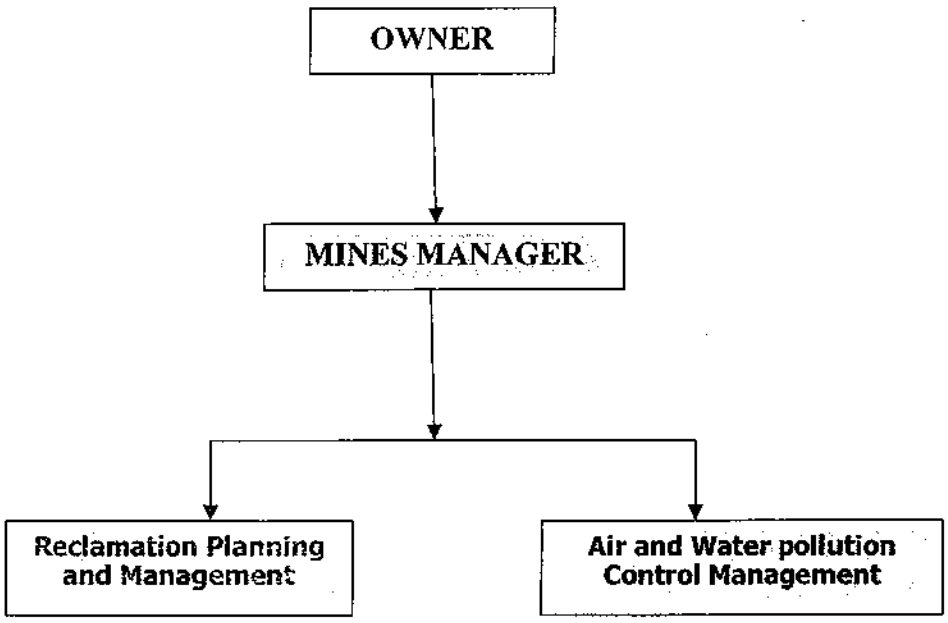
Environment Monitoring Programme

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 20969.95 cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance this Mining Plan & pmcp 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, thereby 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, injuryor 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.

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- 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)
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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.

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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.
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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.

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 Bekchuri Stone Deposit of M/s Bekchuri Stone Works (Partners : Mr. Shahjahan Ansari & Md. Shahid Ansari), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (1.94 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

12. Mirapahar Stone Mines of Md. Rabbul Ansari (Partner), Mauza : Mirapahar, Block : Borio, Distt. : Sahibganj, Jharkhand (3.64 Ha).

(Proposal no.: SIA/JH/MIN/ 513209 /2024)

Name of the consultant : P & M Solution, Noida, U.P.

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/2016-17/107, dated 26.12.2016.

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, Sahibganj which has been taken up for consideration on 08.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 104/M, dated 31.01.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2272, dated 16.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 51194.53 cum/annum or 1,50,000 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Mirapahar Stone Mine	
2	Lessee:	:	Partner - Md Rabbul Ansari, &Amarjeet Kumar Singh	
3	Lease Address	:	Mauza – Mirapara, Block – Borio, District – Sahibganj, State – Jharkhand	
4	Lease Area	:	3.64 ha	Acres- 9.0 Acres
5	Type of Land	:	Non-Forest (Pvt. Raity Land)	
6	Project Cost	:	Rs. 1.40 cr.	
7	EMP Budget	:	Capital: Rs. 7.25 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	1710590.6 tons	583819.31 cum
10	Mine Life	:	Upto the lease period i.e. 28.01.2017 to 27.01.2027.	
11	Man power	:	17	
12	Water Requirement	:	6.87~ 7.0 KLD (Drinking: 0.17 KLD, Dust Suppression: 4.70 KLD, Plantation: 2.0 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	:	Ganga River, Ganga River, Approx. 3.50 km in North direction.	
17	Nearest Habitation	:	Mirapahar village, Approx.0.61 km in NW direction	
18	Nearest Railway Station	:	Sakrigali Railway station, Approx. 2.79 km towards NNE direction.	
19	Nearest Air Port	:	Deoghar Airport, Deoghar, Approx. 130.58 km towards SW direction.	
20	Nearest Forest	:	Open mixed jungle, Approx. 1.5 km towards SW direction of mine site.	
21	Road & Highways	:	NH - 33, Approx. 1.77 km in NNW direction.	

CO-ORDINATES

1	Latitude	:	From 25°13'5.8" N	To 25°13'10.15" N
2	Longitude	:	From 87°41'50.7" E	To 87°41'54.7" E

LAND DETAILS

Khata no.	Plot no.
04, 09, 28	98 (P), 100 (P), 101 (P), 105 (P) & 106 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 28.01.2017 to 27.01.2027.
2	CO	:	The CO, Borio vide letter no. 02/16, dated 09.02.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Sahibganj vide memo no. 1341/M, dated 10.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 36, dated 04.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 649, dated 10.05.2016 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. 123, Page no. 288). However, plot no. 98 (P) is not mentioned in the DSR. All other details of the project are mentioned in the DSR. The previous EC and all other documents submitted includes all the plot numbers including plot no. 98 (P).
7	Gram Sabha	:	Gram Sabha conducted on 04.02.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Sahibganj vide Letter No. 859, dated 19.08.2021.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/107, dated 26.12.2016.
10	Compliance report of EC and Grid certificate	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2272, dated 16.12.2024 and also certified that said project does not come under Grid no. 1, 3, 4 & 7.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. No. JSPCB/HO/RNC/CTE-1289704 /2017/140, dated 07.04.2017.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. No. JSPCB/RO/DMK/CTO-18282826 /2024/91, dated 05.04.2024.

13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 104/M, dated 31.01.2024.
14	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized mining method	
2	Quarry Area	:	3.64 ha or 9.0 Acres	Life of Mine – Upto the lease period i.e. 28.01.2017 to 27.01.2027.
3	Waste Generation	:	Very little amount of waste will be generated, which will be used in construction of approach road and back filling	
4	Stripping Ratio	:	01:0.1	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	105 AMSL to 140 AMSL	
8	Ground Level Elevation	:	105 AMSL	
9	Ultimate Working Depth	:	100 AMSL (5mbgl)	
10	Water Table	:	85-87AMSL (23-25mbgl)	
11	Topography of Mine	:	The lease area represents undulating topography covered by basalt.	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production in EC In Tons	Production of Stone in Cum	Production of Stone in Tons	Bench AMSL
1st Year	1,50,000	51,194.53	1,50,000	136-130
2nd Year	1,50,000	51,194.53	1,50,000	130-124
3rd Year	1,50,000	51,194.53	1,50,000	124-118
4th Year	1,50,000	51,194.53	1,50,000	118-112
5th Year	1,50,000	51,194.53	1,50,000	112-106
Total	**7,50,000**	**255972.65**	**7,50,000**	

As per approved mine plan production: - 51194.53 cum/annum or 1,50,000 TPA

As per EC letter production: - 51194.53 cum/annum or 1,50,000 TPA.

Land Use

Category	Present Land Use (in Ha)	At the End of Plan Period (in Ha.)	At the End of mine (in Ha.)

Quarry	0.78	3.04	3.17 (Entire Area is converted as water reservoir)
Infrastructure	Nil	0.01	Nil
Road	Nil	0.008	Nil
Garland drain	Nil	0.12	Nil
Safety Zone	0.40 (Plantation)	0.40 (Plantation)	0.40 (Plantation)
Total area in use	**1.18**	**3.57**	**3.57**
Balanced Unused Area	2.46	0.07	0.07
Total Lease area	**3.64**	**3.64**	**3.64**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.40 ha	1000 (Already done during previous year of mining)
2	Along Approach Road	:	450 m	900
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 2000 saplings were proposed to be planted. Out of which 1000 plant in Safety Zone area have been planted during previous year of mining.
(900 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1000 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	--	 14,000 8,000 8,000

	iv) Noise		7,000
3	Plantation	5,00,000	1,00,000
4	Construction and maintenance of haul road	2,25,000	1,50,000
TOTAL		**7,25,000**	**4,87,000**

Note: *1000 plants * 500 Rs (for each plants including hedges and fences) = 5.0 Lakh

A total of 2000 saplings were proposed to be planted. Out of which 1000 plant in Safety Zone area have been planted during previous year of mining.

(900 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1000 Plants)

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- or 1,50,000/- (including maintenance material)

**** 5.0 lakh per kilometer (500000 * 0.45 km haul road =2,25,000/-)***

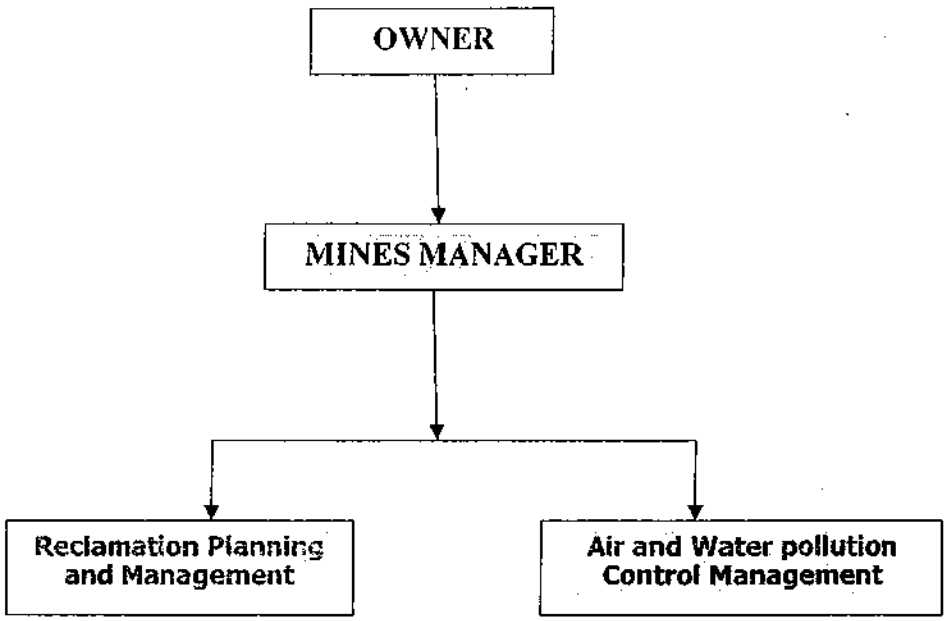
Environment Monitoring Programme

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

The small quantity of waste will be dumped in the lease area with suitable precautions in the plan period and will be used for backfilling in plan and conceptual periods.

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, thereby 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, injuryor 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 Mirapahar Stone Mines of Md. Rabbul Ansari (Partner), Mauza : Mirapahar, Block : Borio, Distt. : Sahibganj, Jharkhand (3.64 Ha) is recommended for grant of EC. However, the EC is to be issued only after obtaining clarification from DMO with regard to plot no. 98 (P) which is missing in approved DSR. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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13. Leba Stone Deposit of M/s Jay Hind Stone Works (Partners : Mr. Wasim Ansari & Md. Nazim Ansari) , Village : Leba, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.023 Ha).

(Proposal no.: SIA/JH/MIN/ 523702 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 53911.55 cum/annum or 145561.19 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Leba Stone Deposit	
2	Lessee:	:	M/s Jay Hind Stone Works Partner. – Wasim Ansari, & Md. Nazim Ansari	
3	Lease Address	:	Village – Leba, Anchal- Taljhari, District – Sahibganj, State - Jharkhand	
4	Lease Area	:	2. **023** ha.	Acres-5.0 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 70.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 18.225 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	448394.30 cum	1210664.62tonnes
10	Mine Life	:	8.3 years	
11	Man power	:	19	
12	Water Requirement	:	12.91 ~ 13.00 KLD (Drinking: 0.19 KLD, Dust Suppression: 7.09KLD, Plantation: 5.63 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	:	Ganga River - Approx. 12.65 km towards NE direction of mine site.	
17	Nearest Habitation	:	Churi village approx. 505 meters East direction of mine site	
18	Nearest Railway Station	:	Kalian Chak Railway station, approx. 6.87 km towards ENE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 116.24 km towards WSW direction.	
20	Nearest Forest	:	Protected Forest - Approx. 4.28 km towards East direction of mine site. Protected Forest - Approx. 4.34 km towards ESE direction of mine site. Fairly Dense Mixed jungle - Approx. 1.37 km towards North direction of mine site.	

21	Road & Highways	:	SH - 18, Approx. 5.57 km towards West direction..

CO-ORDINATES

1	Latitude	:	From 25°01'42.581""N	To 25° 01' 48.1553" N
2	Longitude	:	From 87°40'09.9373"E	To 87°40'17.7688" E

LAND DETAILS

Khata no.	Plot no.
01 & 07	11 (P) & 12 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 741/M, dated 13.08.2024.
2	CO	:	The CO, Taljhari vide letter no. 307, dated 08.07.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 580/M, dated 09.07.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2143, dated 01.11.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 2156, dated 02.11.2023 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 Sahibganj District (Sl. No. 02, Page no. 153).
7	Gram Sabha	:	Gram Sabha conducted on 27.02.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Memo No. 907/M, dated 18.09.2024.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 336/M, dated 19.02.2025 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.

10	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	:	2.023Ha. Or 5.0 Acre	Life of Mine – 8.3 Years
3	Waste Generation	:	Total 30909.25 cum in-situ waste shall be generated during this plan period	
4	Stripping Ratio	:	1: 0.5	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	175 AMSL to 201 AMSL	
8	Ground Level Elevation	:	175 AMSL	
9	Ultimate Working Depth	:	155 AMSL (20 bgl)	
10	Water Table	:	142-145 AMSL (30-33 m bgl)	
11	Topography of Mine	:	Area represents a gently sloping land with rock mass of Basalt.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in plan period	Intercalated waste in Cum	Total Waste in Cum	Bench AMSL
1st Year	51795.90	139848.93	5928.00	2726.10	8654.10	**197-179**
2nd Year	52018.20	140449.14	4446.00	2737.80	7183.80	**179-173**
3rd Year	52314.60	141249.42	1170.00	2753.40	3923.40	**173-167**
4th Year	53209.50	143665.65	3354.00	2800.50	6154.50	**197-161**
5th Year	53911.55	145561.19	2156.00	2837.45	4993.45	**191-179**
Total	**263249.75**	**710774.33**	**17054.00**	**13855.25**	**30909.25**	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	1.339	1.601 (0.258 ha area shall be Backfilled, 1.343 ha

			converted shall to water reservoir.)
Waste Dump	0.0	0.168	Nil (waste dump to be removed and backfilled)
Road	0.0	0.004	0.00
Safety Zone (Plantation)	0.0	0.422 (Plantation)	0.422 (Plantation)
Total	0.0	1.933	2.023
Unused Area	2.023	0.090	0
Total Lease Area	**2.023**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.422 ha	1055
2	Along Approach Road	:	830 m	1660
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	14,07,500	1,00,000
4	Construction and maintenance of haul road	4,15,000	1,50,000
TOTAL		**18,22,500**	**4,87,000**

Note: *2815 plants * 500 Rs (for each plants including hedges and fences) = Rs. 14,07,500/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- (including maintenance)
**** 5.0 lakh per kilometer (500000 * 0.83 km haul road = 4,15,000/-)***

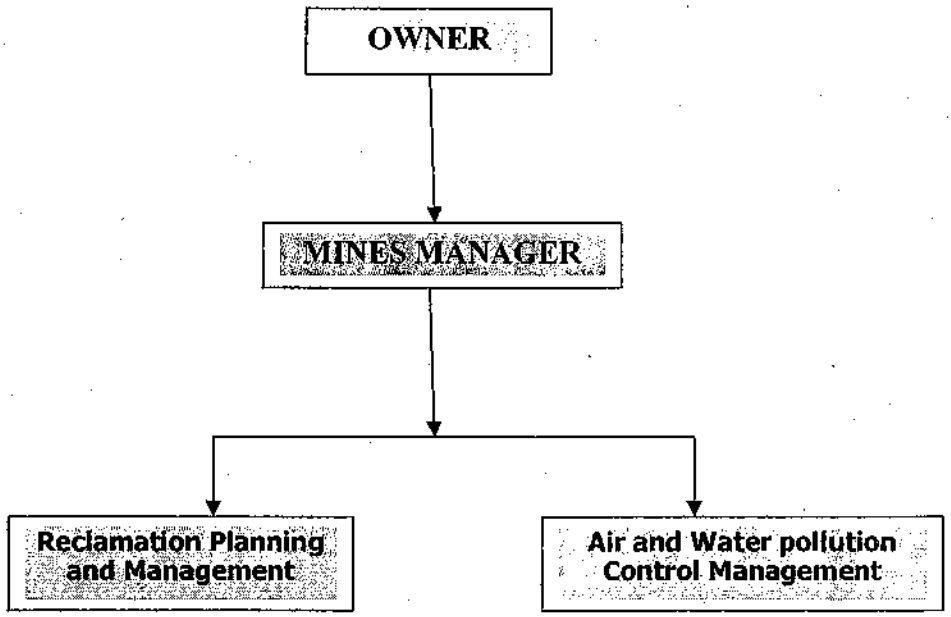
Environment Monitoring Programme

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

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 30909.25 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 15454.62 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 15454.62 cum in situ 19318.28 cum loose & 16420.54 cum compact waste shall be temporary dumped in north-eastern part of the applied lease area, dumping shall be done up to fifth year of plan period of the applied lease area which will cover 0.168ha 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, thereby 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, injuryor 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 (PPF) 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 Leba Stone Deposit of M/s Jay Hind Stone Works (Partners : Mr. Wasim Ansari & Md. Nazim Ansari) , Village : Leba, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.023 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

14. **Stone Mine of M/s Alok Stone (Prop. : Shri Alok Ranjan) , Village : Pangro, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.93 Ha).**

(Proposal no.: SIA/JH/MIN/ 525207 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is an expansion project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

The M/S Alok Stone has been previously granted for Environment clearance on 16.04.2022 with production capacity 55444.44 cum/annum or 149700 TPA. Now, the proposal has been applied for the Environment clearance (Expansion, Category B2) under production capacity of 144429 cum/annum or 389957 TPA within same mining lease area.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	M/s Alok Stone (Area 2.93 Ha. or 7.25 Acre)	
2	Lessee:	:	M/s Alok Stone, Proprietor- Sri Alok Ranjan	
3	Lease Address	:	Village - Pangro Anchal- Borio, District-Sahibganj State- Jharkhand.	
4	Lease Area	:	2.93 ha.	Acres- 7.25 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 120.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 18.75 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	Expansion	
9	Mineable Reserves	:	1417280.74 cum	3826658 tonnes
10	Mine Life	:	9.8 or 10 years	
11	Man power	:	22	
12	Water Requirement	:	13.41~13.50 KLD (Drinking: 0.22 KLD, Dust Suppression: 7.29 KLD, Plantation: 5.90 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	:	Ganga River, Approx. 4.23 km towards North direction of mine site.	
17	Nearest Habitation	:	Bara Pagaro village approx. 610 meters North direction of mine site.	
18	Nearest Railway Station	:	Sahibganj Railway station, approx. 6.06 km towards NW direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 129.00 km towards SW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 3.49 km towards South direction of mine site. Protected Forest, Approx. 3.60 km towards SE direction of mine site.	

			Protected Forest, Approx. 3.90 km towards SSE direction of mine site.
21	Road & Highways	:	SH- 18, Approx. 1.0 km towards West direction.

CO-ORDINATES

1	Latitude	:	From 25°12' 5.41" N	To 25°12' 12.73" N
2	Longitude	:	From 87°40'40.65" E	To 87°40'47.64" E

LAND DETAILS

Khata no.	Plot no.
14	35 (P)
10	24 (P) & 34 (P)
05	33 (P)
07	32 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 21.09.2024 to 20.09.2034.
2	CO	:	The CO, Borio, Sahibganj vide letter no. 78/Ra., dated 17.02.2020 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 153/M, dated 05.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1990, dated 23.11.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 461, dated 22.02.2020 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The project is not specifically mentioned in the approved DSR of Sahibganj District in Chapter 09. DMO, Sahibganj vide letter no. 432/M, Dated 11.03.2025 requested to consider the said project proposal as part of chapter

			09 (Lease Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for consideration for grant of EC. The Committee accepted the request of the DMO, Sahibganj.
7	Gram Sabha	:	Gram Sabha conducted on 24.01.2020.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 174, dated 06.02.2025.
9	Production report	:	Production report issued by DMO, Sahibganj vide memo no. 154, dated 05.02.2025 certified that the production is nil.
10	Previous EC	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/ 2021-22/2536/2021/23, dated 16.04.2022.
11	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.93 Ha. or 7.25 Acres	Life of Mine – 9.8 or 10 Years
3	Waste Generation	:	Total 85719 cum in-situ waste shall be generated during this plan period.	
4	Stripping Ratio	:	1: 0.13	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	70 AMSL to 120 AMSL	
8	Ground Level Elevation	:	70 AMSL	
9	Ultimate Working Depth	:	25 AMSL (45 m bgl)	
10	Water Table	:	7-5 AMSL (63-65 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 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
1st Year	140277	378748	40020	7383	47403	109 - 85

2nd Year	142462	384647	11960	7498	19458	85 - 79
3rd Year	143555	387597	0	7556	7556	79 - 67
4th Year	144429	389957	0	7602	7602	67 - 49
5th Year	133941	361639	0	3701	3701	79 - 61
Total	**704663**	**1902589**	**51980**	**33739**	**85719**	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	1.984	2.431 (0.360 ha area shall be Backfilled, 2.071 ha converted shall to water reservoir.)
Waste Dump	0.0	0.391	Nil (waste dump to be removed and backfilled)
Road	0.0	0.004	0.00
Safety Zone	0.0	0.499 (Plantation)	0.499 (Plantation)
Total	0.0	2.878	2.93
Unused Area	2.93	0.052	0.0
Total Lease Area	**2.93**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.499 ha	1250
2	Along Approach Road	:	800 m	1600
3	No. of plants distributed with	:	--	100

	consultation local authorities /village Panchayat			

- 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	14,75,000	1,00,000
4	Construction and maintenance of haul road	4,00,000	1,50,000
TOTAL		**18,75,000**	**4,87,000**

Note: *2950 plants * 500 Rs (for each plants including hedges and fences) = Rs. 14,75,000/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- (including maintenance)
**** 5.0 lakh per kilometer (500000 * 0.80 km haul road = 4,00,000 /-)***

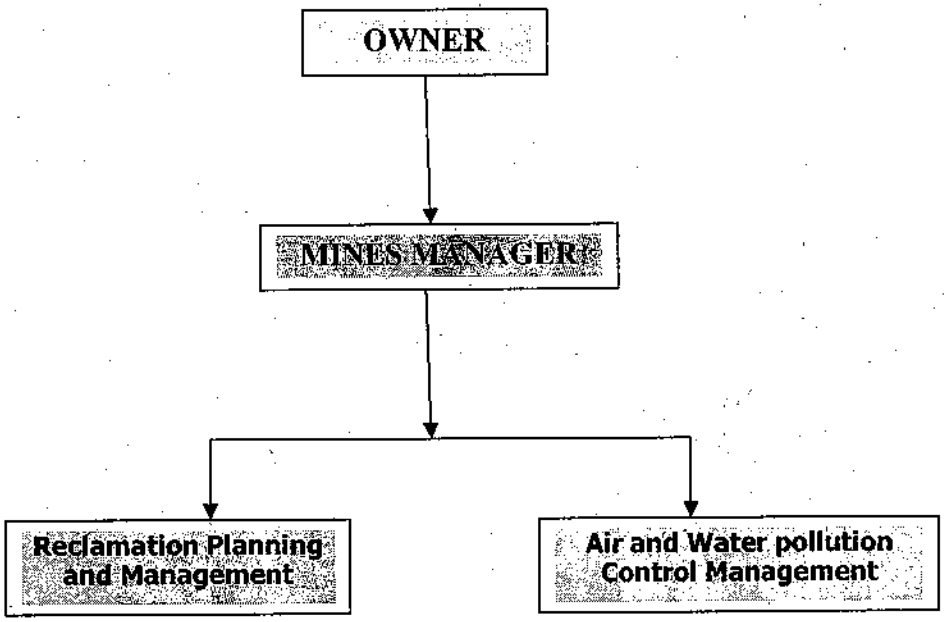
Environment Monitoring Programme

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

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 85719 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 48724 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material 36995 cum waste shall be temporary dumped on the northern part of the applied lease area and it will cover about 0.391 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, thereby 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, injuryor 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	Very	Minor	20

		material, Exposure to Dust	Unlikely		
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 Stone Mine of M/s Alok Stone (Prop. : Shri Alok Ranjan) , Village : Pangro, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.93 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

15. Stone Mine of M/s Alok Stone (Prop. : Shri Alok Ranjan) , Village : Partemako, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.83 Ha).

(Proposal no.: SIA/JH/MIN/ 525070 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is an expansion project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

The M/s Alok Stone has been previously granted for Environment clearance on 16.04.2022 with production capacity 55333.33 cum/annum or 149400 TPA. Now, the proposal has been applied for the Environment clearance (Expansion, Category B2) under production capacity of 114616 cum/annum or 309462 TPA within same mining lease area.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	M/s Alok Stone (Area 2.83 ha. or 7.0 Acres)	
2	Lessee:	:	M/s Alok Stone, Proprietor- Sri Alok Ranjan	
3	Lease Address	:	Village - Partemako, Anchal- Borio, District-Sahibganj State- Jharkhand.	
4	Lease Area	:	2.83 ha.	Acres- 7.00 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 120.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 15.865 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	Expansion	
9	Mineable Reserves	:	1140763.70 cum	3080062 tonnes
10	Mine Life	:	9.99 or 10 years	
11	Man power	:	21	
12	Water Requirement	:	11.50 KLD (Drinking: 0.21 KLD, Dust Suppression: 6.14 KLD, Plantation: 5.14 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	:	Ganga River, Approx. 6.37 km towards East direction of mine site.	
17	Nearest Habitation	:	Partebedo village approx. 640 meters NNE direction of mine site.	
18	Nearest Railway Station	:	Maharajpur Railway station, approx. 5.53 km towards ENE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 128.82 km towards SW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 1.49 km towards South direction of mine site. Protected Forest, Approx. 1.60 km towards SW direction of mine site. Protected Forest, Approx. 1.90 km towards SSE direction of mine site.	
21	Road & Highways	:	SH- 18, Approx. 2.52 km towards West direction.	

CO-ORDINATES

1	Latitude	:	From 25°11' 10.29" N	To 25°11' 14.96" N
2	Longitude	:	From 87°41'36.83" E	To 87°41'46.74" E

LAND DETAILS

Khata no.	Plot no.
22, 5 & 28	39 (P), 86 (P) & 87 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 24.09.2024 to 23.09.2034.
2	CO	:	The CO, Borio vide letter no. 77/Ra., dated 17.02.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 150/M, dated 05.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1981, dated 20.11.2020, certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 260, dated 01.02.2020 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The project is not specifically mentioned in the approved DSR of Sahibganj District in Chapter 09. DMO, Sahibganj vide letter no. 432/M, Dated 11.03.2025 requested to consider the said project proposal as part of chapter 09 (Lease Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for consideration for grant of EC. The Committee accepted the request of the DMO, Sahibganj.
7	Gram Sabha	:	Gram Sabha conducted on 25.01.2020.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 175, dated 06.02.2025.
9	Production report	:	Production report issued by DMO, Sahibganj vide memo no. 151, dated 05.02.2025 certified that the production is nil.

10	Previous EC	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/ 2021-22/2541/2021/24, dated 16.04.2022.
11	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.83 Ha. or 7.00 Acres	Life of Mine – 9.99 or 10 years
3	Waste Generation	:	Total 76877 cum in-situ waste shall be generated during this plan period.	
4	Stripping Ratio	:	1: 0.11	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	180 AMSL to 230 AMSL	
8	Ground Level Elevation	:	180 AMSL	
9	Ultimate Working Depth	:	153 AMSL (27 m bgl)	
10	Water Table	:	142-140 AMSL (38-40 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 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
1st Year	113738	307092	28380	5986	34366	225 - 201
2nd Year	113863	307431	9636	5993	15629	201 - 195
3rd Year	113989	307769	8580	5999	14579	195 - 189
4th Year	114114	308108	264	6006	6270	189 - 183
5th Year	114616	309462	0	6032	6032	177 - 171
Total	**570319**	**1539862**	**46860**	**30017**	**76877**	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	1.726	2.321 (0.351 ha area shall be Backfilled, 1.970 ha converted shall to water reservoir.)
Waste Dump	0.0	0.576	Nil (waste dump to be removed and backfilled)
Road	0.0	0.003	0.00
Safety Zone	0.0	0.509 (Plantation)	0.509 (Plantation)
Total	0.0	2.816	2.83
Unused Area	2.83	0.016	0.0
Total Lease Area	**2.83**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.509 ha	1273
2	Along Approach Road	:	600 m	1200
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	12,86,500	1,00,000
4	Construction and maintenance of haul road	3,00,000	1,50,000
TOTAL		**15,86,500**	**4,87,000**

Note: *2573 plants * 500 Rs (for each plants including hedges and fences) = Rs. 12,86,500/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- (including maintenance)
**** 5.0 lakh per kilometer (500000 * 0.60 km haul road = 3,00,000 /-)***

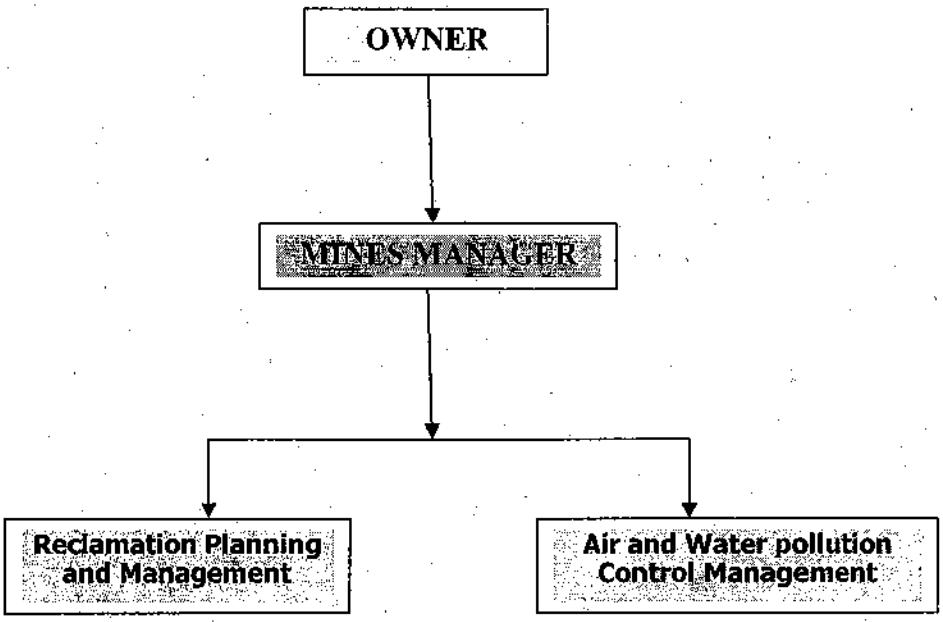
Environment Monitoring Programme

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

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 76877 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 38438 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 38438 cum in situ 48048 cum loose & 40840.80 cum compact waste shall be temporary dumped on the eastern part of the applied lease area and it will cover about 0.576 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, thereby 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank	L5 (Very	L4 (Remote)	L3	L2	L1

(Likelihood x Consequence)	Unlikely)		(Occasional)	(Probable)	(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 Stone Mine of M/s Alok Stone (Prop. : Shri Alok Ranjan) , Village : Partemako, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

16. Stone Mine of M/s Ram Raheem Stone Works (Partner : Shri Tinkal Kumar Bhagat) , Village : Pakariya, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.32 Ha).

(Proposal no.: SIA/JH/MIN/ 527231 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 89056.8 cum/annum or 240453.36 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	M/s Ram Raheem Stone Works
2	Lessee:	:	M/s Ram Raheem Stone Works, Partner: Sri Tinkal Kumar Bhagat
3	Lease Address	:	Village – Pakariya, Anchal – Mandro , District – Sahibganj, State - Jharkhand

4	Lease Area	:	2.32 ha.	Acres-5.74 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 110.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 18.50 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	889656.00 cum	2402071.20 tonnes
10	Mine Life	:	9.98 or 10 years	
11	Man power	:	45	
12	Water Requirement	:	13.45~ 13.50 KLD (Drinking: 0.45 KLD, Dust Suppression: 7.2 KLD, Plantation: 5.8 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	:	Ganga River, Ganga, Approx. 4.30 km in NNE direction.	
17	Nearest Habitation	:	Tetria village approx. 1020 meters WSW direction of mine site	
18	Nearest Railway Station	:	Karamtola Railway Station, approx. 2.78 km towards NE direction	
19	Nearest Airport	:	Deoghar Airport, approx. 121.45 km towards SW direction	
20	Nearest Forest	:	Protected Forest, Approx. 1.0 km in NW direction. Protected Forest, Approx. 1.12 km in NE direction. Open Scrub, Approx. 0.50 km in SW direction. Fairly dense mixed jungle, Approx. 1.00 km in South direction.	
21	Road & Highways	:	NH - 33, Approx. 2.97 km in NE direction.	

CO-ORDINATES

1	Latitude	:	From 25°14'24.31" N	To 25°14' 30.14" N
2	Longitude	:	From 87°31'40.23" E	To 87°31'48.53"E

LAND DETAILS

J.B. no.	Plot no.
29, 45, 43 & 22	263, 264, 265, 266, 267 (P), 268 (P) & 270 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 819/M, dated 28.08.2024.
2	CO	:	The CO, Mandro vide letter no. 68/Ra., dated 04.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 1422/M, dated 20.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2107, dated 03.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 1751, dated 05.07.2022 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 Sahibganj District (Sl. No. 17, Page no. 160).
7	Gram Sabha	:	Gram Sabha conducted on 04.07.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 1353/M, dated 10.12.2024.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.32 Ha. Or 5.74 Acre	Life of Mine – 9.98 or 10 Years
3	Waste Generation	:	Total 24269.7 cum waste shall be generated during this plan period	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	261 AMSL to 270 AMSL	
8	Ground Level Elevation	:	261 AMSL	
9	Ultimate Working Depth	:	218 AMSL (43 m bgl)	
10	Water Table	:	200-202 AMSL (59-61 m bgl)	
11	Topography of Mine	:	Area undulating topography	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Total Waste in cum	Bench AMSL
1st Year	86090.90	232445.43	5420.10	272-260
2st Year	87210.00	235467.00	4848.00	266-260
3st Year	89056.80	240453.36	4687.20	260-254
4st Year	88350.00	238545.00	4650.00	260-248
5st Year	88623.60	239283.72	4664.40	254-248
Total	**439331.30**	**1186194.51**	**24269.7**	

Land Use

Land Utilization	Existing Land use (Ha.)	During Plan Period (ha)	During Conceptual Period (ha)
Quarry	Nil	1.75	1.84(entire area will be converted into water reservoir)
Infrastructure	Nil	0.01	Nil
Approach roads	0.01	Nil	Nil
Garland drain	Nil	0.06	Nil
Green Belt	Nil	0.48 (Plantation)	0.48 (Plantation)
Settling Tank	Nil	0.01	Nil
Total	0.01	2.31	2.32
Total Lease Area	**2.32**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.48 ha	1200
2	Along Approach Road	:	800 m	1600
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	14,50,000	1,00,000
4	Construction and maintenance of haul road	4,00,000	1,50,000
TOTAL		**18,50,000**	**4,87,000**

Note: *2900 plants * 500 Rs (for each plants including hedges and fences) = Rs. 14,50,000/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 – 90000/- ~ 1,50,000/-
* 5.0 lakh per kilometer (500000 * 0.80 km haul road = 4,00,000/-)

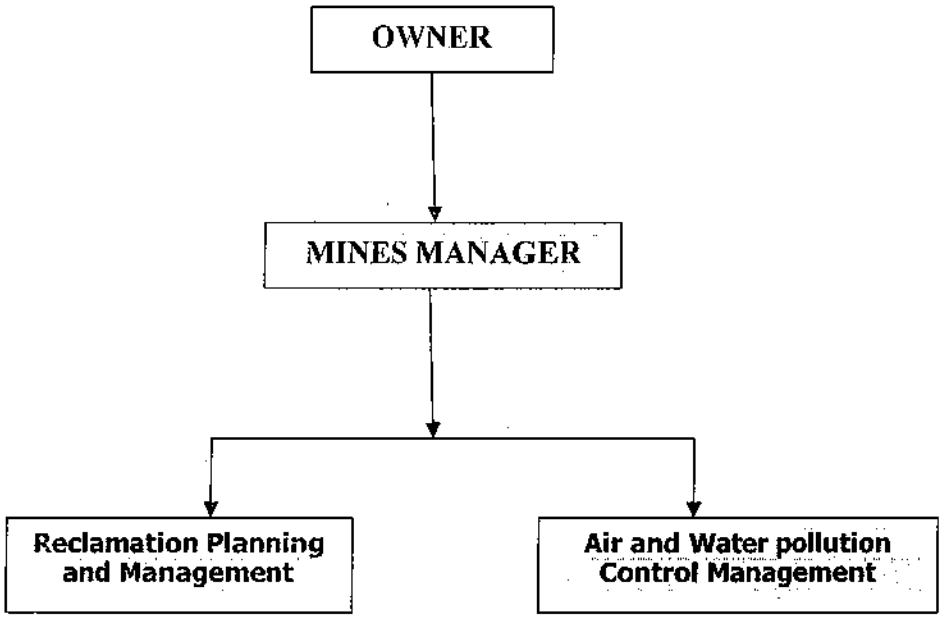
Environment Monitoring Programme

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 17735.7 cum or 47886.39 tones waste shall be generated during this plan period. The waste generated during plan period will used for construction of approach road and also use for road fillings.

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, thereby 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank	L5 (Very	L4 (Remote)	L3	L2	L1

(Likelihood x Consequence)	Unlikely)		(Occasional)	(Probable)	(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 Stone Mine of M/s Ram Raheem Stone Works (Partner : Shri Tinkal Kumar Bhagat) , Village : Pakariya, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.32 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

17. **Stone Mine of M/s P.K. Traders (Prop. : Shri Punit Kumar Khudania) , Village : Bagcha Mako, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.93 Ha).**

(Proposal no.: SIA/JH/MIN/ 527166 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 109777.77 cum/annum or 296400.00 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	M/s P K Traders
2	Lessee:	:	M/s P K Traders Proprietor – Sri Punit Kumar Khudania,
3	Lease Address	:	Village – Bagcha Mako, Anchal- Taljhari, District – Sahibganj, State - Jharkhand

4	Lease Area	:	2.93 ha.	Acres-7.25 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 130.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 13.025 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1083456 cum	2925331.20 tonnes
10	Mine Life	:	9.6 or 10 years	
11	Man power	:	45	
12	Water Requirement	:	9.76~10.0 KLD (Drinking: 0.45 KLD, Dust Suppression: 4.90 KLD, Plantation: 4.41 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	:	Ganga River, Approx. 9.82 km towards ENE direction of mine site.	
17	Nearest Habitation	:	Batbanga village approx. 900 meters North direction of mine site	
18	Nearest Railway Station	:	Tinpahar Railway station, approx. 6.66 km towards ESS direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 120 km towards SW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 2.6 km towards NE direction of mine site. Protected Forest, Approx. 3.8 km towards SE direction of mine site.	
21	Road & Highways	:	SH-18, Approx. 5.85 km towards ESS direction.	

CO-ORDINATES

1	Latitude	:	From 25° 03' 25.00" N	To 25° 03' 35.23" N
2	Longitude	:	From 87° 40' 49.86" E	To 87° 40' 57.58"E

LAND DETAILS

J.B. no. / Khata no.	Plot no.
12	70 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1153/M, dated 24.10.2023.
2	CO	:	The CO, Taljhari vide letter no. 97, dated 15.02.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 400/M, dated 04.03.2025 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. 1901, dated 01.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 1868, dated 20.09.2021 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The project is not specifically mentioned in the approved DSR of Sahibganj District in Chapter 13. DMO, Sahibganj vide letter no. 431/M, Dated 11.03.2025 requested to consider the said project proposal as part of chapter 13 (Lol Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for consideration for grant of EC. The Committee accepted the request of the DMO, Sahibganj.
7	Gram Sabha	:	Gram Sabha conducted on 30.01.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 639/M, dated 19.07.2024.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 1155/M, dated 24.10.2023 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
10	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized Method	
2	Quarry Area	:	2.93Ha. Or 7.25 Acre	Life of Mine – 9.6 or 10 Years
3	Waste Generation	:	Total 25,575.00 cum waste generated during this mining plan period	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	245 AMSL to 280 AMSL	
8	Ground Level Elevation	:	245 AMSL	
9	Ultimate Working Depth	:	212 AMSL	
10	Water Table	:	65-67 AMSL (178-180 m bgl)	

11	Topography of Mine	:	Area represents a small hillock.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	140 litre/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Total Waste in Cum	Bench AMSL
1st Year	84666.66	228600.00	4694.00	280-266
2nd Year	99555.55	268800.00	5340.00	266-254
3rd Year	109777.77	296400.00	5817.00	254-242
4th Year	95333.33	257400.00	5180.00	248-236
5th Year	84555.55	228300.00	4544.00	242-236
Total	**473888.86**	**1279500**	**25575.00**	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Barren Land	2.93	0.0	0.0
Quarry	0.0	2.27	2.36 (entire area will be converted into water reservoir)
Infrastructure	0.0	0.01	Nil
Approach Road	0.0	0.0	0.0
Garland drain	0.0	0.07	0.0
Green Belt	0.0	0.57 (Plantation)	0.57 (Plantation)
Settling Tank	0.0	0.01	0.0
Total Lease Area	2.93		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees

1	Safety Zone	:	0.57 ha	1425
2	Along Approach Road	:	340 m	680
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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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4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**13,02,500**	**4,87,000**

Note: *2205 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,02,500/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- (including maintenance)
**** 5.0 lakh per kilometer (500000 * 0.34 km haul road = 1,70,000 or 200000 /-)***

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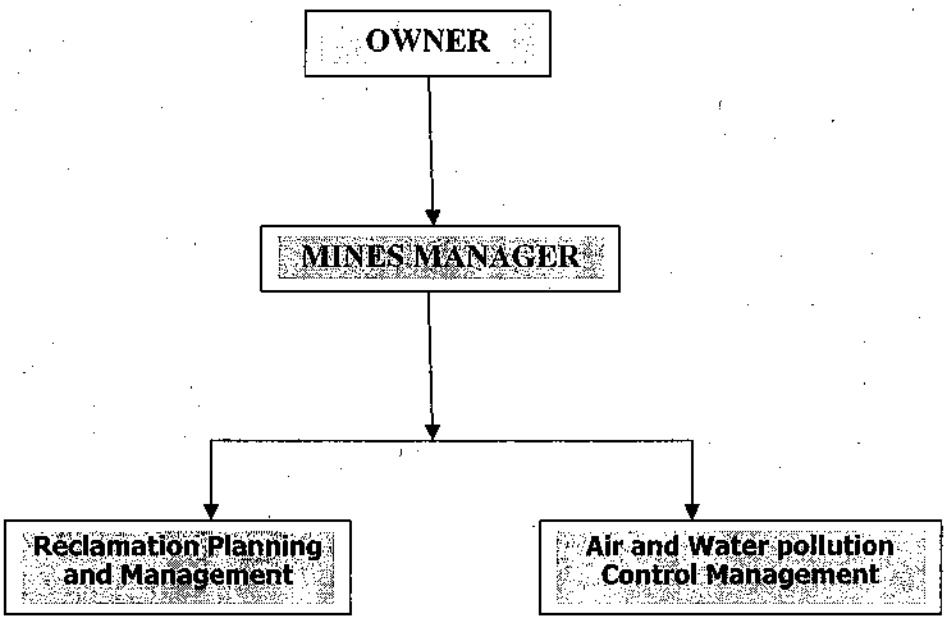
Solid Waste Management

Total 26797.60 cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance. Period and ultimate stage total 225232.40 cum waste generated which is used for village & haul road maintenance.

Organization Structure



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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, thereby 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, injuryor 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 Stone Mine of M/s P.K. Traders (Prop. : Shri Punit Kumar Khudania) , Village : Bagcha Mako, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.93 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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18. Stone Mine of M/s Balaji Stone Works (Partners : Shri Tinkal Kumar Bhagat & Shri Mantu Kumar Sah), Village : Belbhadri, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (0.45 Ha).

(Proposal no.: SIA/JH/MIN/ 525517 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 4212.5 cum/annum or 12183.75 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	M/s Balaji stone works	
2	Lessee:	:	M/s Balaji stone works Partner.- Sri Tinkal Kumar Bhagat & Sri Mantu Kumar Sah	
3	Lease Address	:	Mouza - Belbhadri, Anchal – Mandro, District – Sahibganj, State- Jharkhand	
4	Lease Area	:	0.45 ha.	Acres- 1.10 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 80.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 16.50 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	42845.00 cum	or 115681.50 tones
10	Mine Life	:	9.50 or 10 years	
11	Man power	:	45	
12	Water Requirement	:	11.65 ~ 12.00 KLD (Drinking: 0.45 KLD, Dust Suppression: 6.4 KLD, Plantation: 4.8 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	:	Ganag River, Approx. 6.50 km towards NE direction of mine site.	
17	Nearest Habitation	:	Tetria village approx. 1020 meters WSW direction of mine site	
18	Nearest Railway Station	:	Mirza Cheuki Railway station, approx. 2.15 km towards North direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 118.41 km towards SW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 1.56 km towards ENE direction of mine site. Protected Forest, Approx. 1.34 km towards SE direction of mine site. Open Scrub, Approx. 0.84 km towards NW direction of mine site.	
21	Road & Highways	:	NH-33, NH-33, Approx. 2.23 km towards North direction.	

CO-ORDINATES

1	Latitude	:	From 25°14'21.52" N	To 25°14'24.14" N
2	Longitude	:	From 87°29'30.29" E	To 87°31'34.14"E

LAND DETAILS

Plot no.
186 (P) & 187

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 778/M, dated 17.08.2024.
2	CO	:	The CO, Mandro vide memo no. 266, dated 26.05.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 1061/M, dated 05.10.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site also certified that the proposed project site is outside of Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2106, dated 03.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 1108, dated 28.04.2022 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 Sahibganj District (Sl. No. 7, Page no. 155).
7	Gram Sabha	:	Gram Sabha conducted on 16.03.2020.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 1352/M, dated 10.12.2024.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.45 Ha. Or 1.10 Acre	Life of Mine – 9.50 or 10 Years
3	Waste Generation	:	Total 1803.50 cum waste shall be generated during this plan period	
4	Stripping Ratio	:	1: 0.4	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	192 AMSL to 202 AMSL	
8	Ground Level Elevation	:	192 AMSL	
9	Ultimate Working Depth	:	180 AMSL (12 m bgl)	
10	Water Table	:	60-62 AMSL (130-132 m bgl)	

11	Topography of Mine	:	Area represents a small hillock.
12	Explosive Requirement	:	70 kg/day
13	Diesel/Fuel requirement	:	80 litre/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Bench AMSL
1st Year	3866.5	10439.55	202-192
2nd Year	4151.5	11209.05	198-192
3rd Year	4512.5	12183.75	198-192
4th Year	3836.1	10357.47	198-186
5th Year	4075.5	11003.85	192 186
Total	**20442.1**	**55193.67**	

Land Use

Land Utilization	Existing Land use (Ha.)	During Plan Period (ha)	During Conceptual Period (ha)
Quarry	Nil	0.21	0.25(entire area will be converted into water reservoir)
Infrastructure	Nil	0.01	Nil
Approach roads	0.01	Nil	Nil
Garland drain	Nil	0.02	Nil
Green Belt	Nil	0.20 (Plantation)	0.20 (Plantation)
Settling Tank	Nil	0.01	Nil
Total	0.01	0.45	0.45
Total Lease Area	**0.45**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.20 ha	500
2	Along Approach Road	:	900 m	1800
3	No. of plants distributed with	:	--	100

	consultation local authorities /village Panchayat			

- 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	12,00,000	1,00,000
4	Construction and maintenance of haul road	4,50,000	1,50,000
TOTAL		**16,50,000**	**4,87,000**

Note: *3090 plants * 500 Rs (for each plants including hedges and fences) = Rs. 12,00,000/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- (including maintenance)
* 5.0 lakh per kilometer (500000 * 0.90 km haul road = 4,50,000 /-)

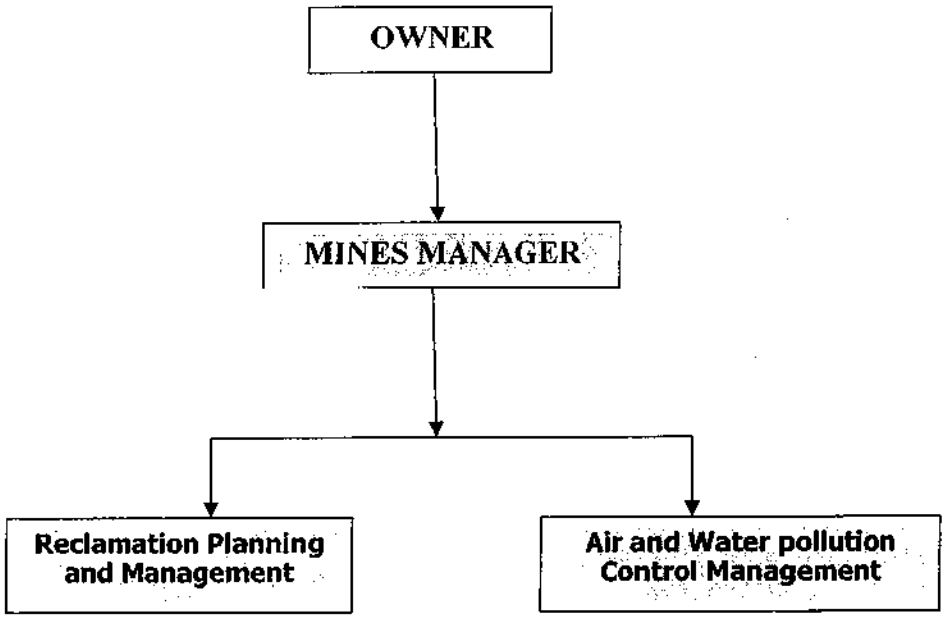
Environment Monitoring Programme

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

There will be few wastes, approximately 1803.50 cum, which are used for construction of approach road and also use for road fillings.

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.
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6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
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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:

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

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- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

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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.

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- Provision of portable rail fencing between the drilling operations and the edge of the bench

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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 Mine of M/s Balaji Stone Works (Partners : Shri Tinkal Kumar Bhagat & Shri Mantu Kumar Sah), Village : Belbhadri, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (0.45 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

19. Stone Mine of M/s Maa Rakshi Stone Works (Prop. : Tinkal Kumar Bhagat), Village :Pakariya, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.47 Ha).

(Proposal no.: SIA/JH/MIN/ 526449 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 58995 cum/annum or 159286.50 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	M/s Maa Rakshi Stone Works	
2	Lessee:	:	M/s Maa Rakshi Stone Works , Proprietor: Sri Tinkal Kumar Bhagat	
3	Lease Address	:	Village – Pakariya, Anchal – Mandro , District – Sahibganj, State - Jharkhand	
4	Lease Area	:	2.47 ha.	Acres-6.10 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 120.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 18.75 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	576859.00 cum	1557519.30 tonnes
10	Mine Life	:	10 years	
11	Man power	:	45	
12	Water Requirement	:	13.75 ~ 14 KLD (Drinking: 0.45 KLD, Dust Suppression: 7.3 KLD, Plantation: 6.0 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	:	Ganga River, Ganga, Approx. 6.54 km in ENE direction.	
17	Nearest Habitation	:	Lahurbera village approx. 1.02 km NW direction of mine site	
18	Nearest Railway Station	:	Karamtola Railway Station, approx. 3.55 km towards NE direction	
19	Nearest Airport	:	Deoghar Airport, approx. 120.39 km towards SW direction	
20	Nearest Forest	:	Protected Forest, Approx. 1.0 km in NW direction. Protected Forest, Approx. 1.12 km in NE direction. Open Scrub, Approx. 0.50 km in SW direction. Fairly dense mixed jungle, Approx. 1.00 km in South direction.	
21	Road & Highways	:	NH - 33, Approx. 3.67 km in NNE direction.	

CO-ORDINATES

1	Latitude	:	From- 25°14'06.49"N	To- 25°14'16.81" N
2	Longitude	:	From- 87°31'23.07" E	To- 87°31'28.26"E

LAND DETAILS

Khata no.	Plot no.
44	45 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 860/M, dated 31.08.2024.
2	CO	:	The CO, Mandro vide memo no. 811/Ra., dated 24.08.2019 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 1421/M, dated 20.12.2024 certified that 01 other mining lease area (6.00 Acre) exists within 500 meters radius from proposed project site and total area is 12.10 Acre and also certified that the proposed project site is outside of Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2108, dated 03.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide memo no. 1585, dated 21.08.2018 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 Sahibganj District (Sl. No. 18, Page no. 161).
7	Gram Sabha	:	Gram Sabha conducted on 04.06.2018.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 1354/M, dated 10.12.2024.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.47 Ha. Or 6.10 Acre	Life of Mine – 10 Years
3	Waste Generation	:	Total 17735.7 cum waste shall be generated during this plan period	
4	Stripping Ratio	:	1: 0.3	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	152 AMSL to 175 AMSL	
8	Ground Level Elevation	:	152 AMSL	

9	Ultimate Working Depth	:	124 AMSL (28 m bgl)
10	Water Table	:	100-102 AMSL (50-52 m bgl)
11	Topography of Mine	:	Area represents a small hillock
12	Explosive Requirement	:	100 kg/day
13	Diesel/Fuel requirement	:	140 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
1st Year	54102.5	146076.75	617.00	2847.50	3464.5	184-166
2nd Year	57353.4	154854.18	547.00	3018.60	3565.6	172-154
3rd Year	58293.9	157393.53	852.00	3068.10	3920.1	173-148
4th Year	54387.5	146846.25	852.00	2862.50	3299.5	166-154
5th Year	58995.0	159286.50	381.00	3105.00	3486	160-148
Total	**283132.3**	**764457.21**	**3249**	**14901.7**	**17735.7**	

Land Use

Land Utilization	Existing Land use (Ha.)	During Plan Period (ha)	During Conceptual Period (ha)
Quarry	Nil	1.72	1.91 (entire area will be converted into water reservoir)
Infrastructure	Nil	0.01	Nil
Approach roads	0.01	Nil	Nil
Garland drain	Nil	0.07	Nil
Green Belt	Nil	0.56 (Plantation)	0.56 (Plantation)
Settling Tank	Nil	0.01	Nil
Proposed Crusher	Nil	0.01	Nil
Total	0.01	2.38	2.47

Total Lease Area	2.47

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.56 ha	1400
2	Along Approach Road	:	750 m	1500
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	--	 14,000 8,000 8,000 7,000
3	Plantation	15,00,000	1,00,000
4	Construction and maintenance of haul road	3,75,000	1,50,000
TOTAL		**18,75,000**	**4,87,000**

Note: *3000 plants * 500 Rs (for each plants including hedges and fences) = Rs. 15,00,000/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/-

* 5.0 lakh per kilometer (500000 * 0.75 km haul road = 3,75,000/-)

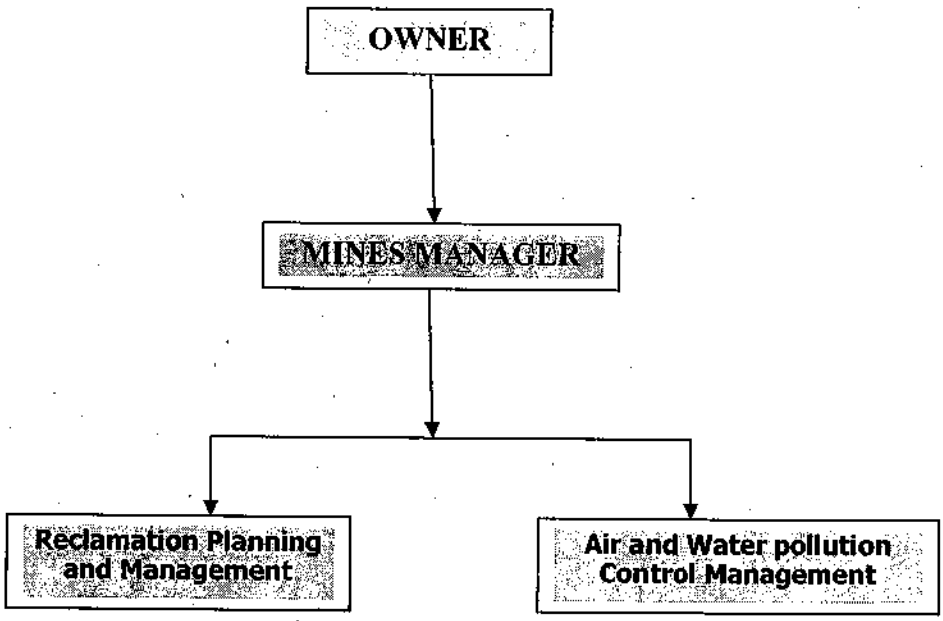
Environment Monitoring Programme

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

Solid Waste Management

It has been calculated that total 17735.7 cum or 47886.39 tones waste shall be generated during this plan period. The waste generated during plan period will used for construction of approach road and also use for road fillings.

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, thereby 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, injuryor 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	Unwanted	Very	Catastrophic	5

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	Explosives	Explosion	Unlikely		
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.

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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.
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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 site shall be wetted before and after blasting operations are completed.
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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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- 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:

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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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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 Mine of M/s Maa Rakshi Stone Works (Prop. : Tinkal Kumar Bhagat), Village :Pakariya, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.47 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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20. **Bijariya Stone Mine of Shri Ashutosh Singh, Village : Bijariya, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.85 Ha).**

(Proposal no.: SIA/JH/MIN/ 527189 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 92815.95 cum/annum or 250603.07 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bijariya Stone Deposit	
2	Lessee:	:	Sri Ashutosh Singh S/o Triyugi Nath Singh	
3	Lease Address	:	Mouza – Bijariya, Anchal - Borio, District – Sahibganj, State-Jharkhand	
4	Lease Area	:	2.85 ha.	Acres-7.05 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 130.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 16.75 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	928074 cum	2505799.80 tonnes
10	Mine Life	:	9.99 or 10 years	
11	Man power	:	45	
12	Water Requirement	:	12.45 ~ 12.50 KLD (Drinking: 0.45 KLD, Dust Suppression: 6.5 KLD, Plantation: 5.5 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	:	Ganag River, Approx. 8.94 km towards n NE direction of mine site.	
17	Nearest Habitation	:	Dhulani village approx. 1.48 Km, Approx. South direction of mine site	
18	Nearest Railway Station	:	Sahibganj Railway station, approx. 7.50 km towards NNE direction	
19	Nearest Airport	:	Deoghar Airport, approx. 122.11 km ESE direction.	
20	Nearest Forest	:	Fairly dense mixed jungle, Approx. 0.50 km towards North direction of mine site. Fairly dense mixed jungle, Approx. 0.65 km towards SE direction of mine site. Dense mixed jungles, Approx. 0.84 km towards SE direction of mine	

			site.
21	Road & Highways	:	SH-18, Approx. 5.90 km in East direction from the mine site.

CO-ORDINATES

1	Latitude	:	From 25°10'21.85"N	To 25°10'30.36" N
2	Longitude	:	From 87°36'348.82" E	To 87°36'55.81"E

LAND DETAILS

J.B. no.	Plot no.
03, 25, 26 & 43	328 (P), 329 (P), 336 (P), 339 (P) & 350 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 344/M, dated 20.02.2025.
2	CO	:	The CO, Borio, Sahibganj vide letter no. 799/Ra., dated 14.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 345/M, dated 20.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site also certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 376, dated 18.02.2025 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahibganj Forest Division vide memo no. 3157, dated 04.12.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The LoI was granted on 20.02.2025. The DSR for Sahibganj was approved by the Sub-Divisional Committee on 21.12.2024 and submitted to SEIAA for approval on 16.01.2025. However, this project lies within the potential zone area in page no. 182 of approved DSR.

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7	Gram Sabha	:	Gram Sabha conducted on 09.10.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 367/M, dated 27.02.2025.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.85 Ha. Or 7.05 Acre	Life of Mine – 9.99 or 10 Years
3	Waste Generation	:	Total 25891.55.00 cum waste generated during this mining plan period.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	150 AMSL to 105 AMSL	
8	Ground Level Elevation	:	105 AMSL	
9	Ultimate Working Depth	:	78 AMSL (27 m bgl)	
10	Water Table	:	47-50 AMSL (58-55 m bgl)	
11	Topography of Mine	:	Area represents undulating topography.	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Bench AMSL
1st **Year**	91,305.45	246524.72	291-276
2nd **Year**	92,815.95	250603.07	282-270
3rd **Year**	92,225.05	249007.64	270-264
4th **Year**	91,133.5	246060.45	264-258
5th **Year**	91,722.5	247650.75	264-252
Total	**459202.45**	**1239846.63**	

Land Use

Type of land use	Existing (ha)	During Plan Period (ha)	During Conceptual Period/ after closure of Mines (ha)
Quarry	Nil	2.18	2.27 (entire area will be converted

			into water reservoir)
Infrastructure	Nil	0.01	Nil
Approach roads	Nil	Nil	Nil
Garland drain	Nil	0.07	Nil
Green Belt	Nil	0.58 (Plantation)	0.58 (Plantation)
Settling Tank	Nil	0.01	Nil
Total	Nil	2.85	2.85
Barren	0.69	Nil	Nil
Total Lease Area	**2.85**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.58 ha	1450
2	Along Approach Road	:	600 m	1200
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	13,75,000	1,00,000
4	Construction and maintenance of haul road	3,00,000	1,50,000
TOTAL		**16,75,000**	**4,87,000**

Note: *2750 plants * 500 Rs (for each plants including hedges and fences) = 13.75 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 * 0.6 km haul road = 3,00,000/-)

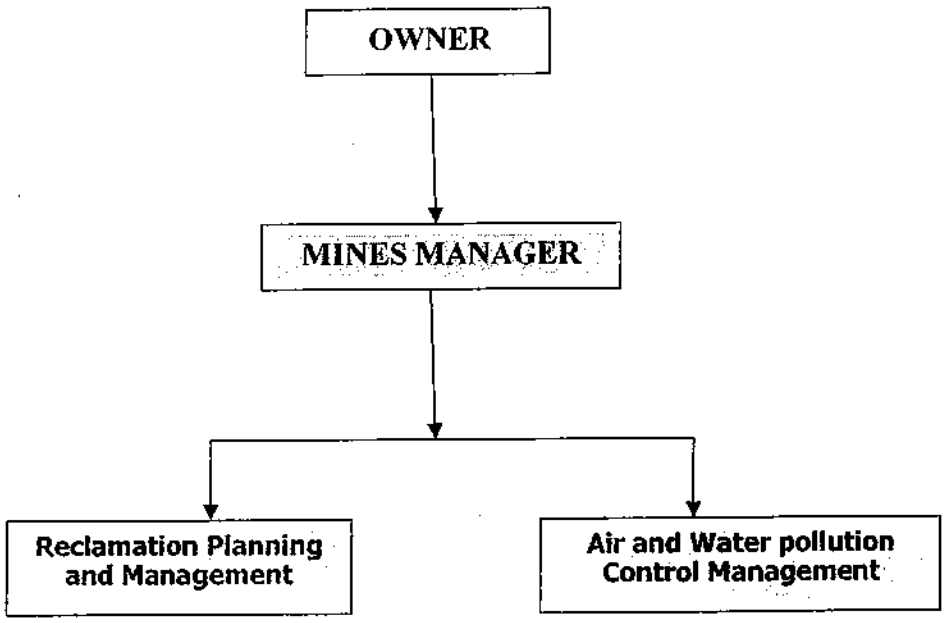
Environment Monitoring Programme

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

Total 25891.55.00 cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance this Mining Plan & pmcp 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, thereby 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, injuryor 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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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 Bijariya Stone Mine of Shri Ashutosh Singh, Village : Bijariya, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.85 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

21. **Harmu & Khambha Stone Deposit of M/s Bhuneshwari Crusher Stone (Prop. : Shri Dwarika Nath Choudhary), Village : Harmu & Khambha, Anchal : Itki, Distt. : Ranchi, Jharkhand (2.62 Ha).**

(Proposal no.: SIA/JH/MIN/ 521518 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 85623.50 cum/annum or 231183.45 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Harmu & Khambha Stone Deposit	
2	Lessee:	:	M/s Bhuneshwari Crusher Stone Prop. - Sri Dwarika Nath Choudhary S/o-Sri Deenanath Choudhary	
3	Lease Address	:	Village – Harmu & Khambha, Anchal- Itki, District – Ranchi, State - Jharkhand	
4	Lease Area	:	2.62 ha.	Acres-6.48 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 90.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 15.35 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	424707 cum	1146708.90 tonnes
10	Mine Life	:	4.96 or 5 years	
11	Man power	:	27	
12	Water Requirement	:	11.17 ~ 11.50 KLD (Drinking: 0.27 KLD, Dust Suppression: 5.56 KLD, Plantation: 5.34 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	:	Potpoto Nadi, Approx. 3.82 km towards WNW direction of mine site.	
17	Nearest Habitation	:	Harmu village approx. 350 Meter WSW direction of mine site	
18	Nearest Railway Station	:	Itki Railway station, approx. 8.66 km towards North direction.	
19	Nearest Airport	:	Birsa Munda Airport, Ranchi approx. 22.64 km towards ENE direction.	
20	Nearest Forest	:	Protected Forest - Approx. 0.28 km towards NW direction of mine	

			site. Protected Forest - Approx. 0.34 km towards NNW direction of mine site. Open jungle mainly Sal - Approx. 1.37 km towards SSE direction of mine site.
21	Road & Highways	:	NH - 43, Approx. 4.51 km towards North direction.

CO-ORDINATES

1	Latitude	:	From 23° 16' 27.30" " N	To 23° 16' 35.29" "N
2	Longitude	:	From 85° 06' 24.65" E	To 85° 06' 34.56" E

LAND DETAILS

Khata no.	Plot no.
03, 04, 23, 32 & 35	115, 536, 537, 539, 555, 560 & 561

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 255/M, dated 16.02.2024.
2	CO	:	The CO, Itki, Ranchi vide letter no. 61 (ii), dated 12.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ranchi vide memo no. 79/M, dated 18.01.2025 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. 399 & 400, dated 07.05.2022 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. 706, dated 28.02.2022 and letter no. 1912, dated 21.04.2022 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 Ranchi District (Sl. no. 07, Page no. 65).
7	Gram Sabha	:	BDO, Itki, Ranchi vide letter no. 1134 (ii), dated 15.12.2021 informed that Gram Sabha conducted on 15.12.2021.

8	Mine Plan Approval	:	Approved by District Mining Officer, Ranchi vide Memo No. 60/M, dated 16.01.2025.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.62 Ha. Or 6.48 Acre Life of Mine – 4.96 or 5 Years
3	Waste Generation	:	Total 45434.45 cum waste generated during this plan period.
4	Stripping Ratio	:	1: 0.5
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	720 AMSL to 721 AMSL
8	Ground Level Elevation	:	720 AMSL
9	Ultimate Working Depth	:	690 AMSL (30 m bgl)
10	Water Table	:	680-680 AMSL (38-40 m bgl)
11	Topography of Mine	:	Area represents a small hillock.
12	Explosive Requirement	:	100 kg/day
13	Diesel/Fuel requirement	:	120 litre/day

Production Details

Year	Overburden in plan period	Intercalated waste in Cum	Total Waste in Cum	Bench AMSL
1st Year	14650.0	4228.75	18878.75	720-714
2nd Year	2600.0	4453.80	7053.80	720-702
3rd Year	0.0	4480.80	4480.80	708-690
4th Year	4506.50	4506.50	12486.50	720-690
5th Year	0.0	2534.60	2534.60	714-696
Total	**21756.50**	**20204.45**	**445434.45**	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	1.75 (0.15 ha area shall be Backfilled, 1.60 ha converted shall to water	1.75 (0.15 ha area shall be Backfilled, 1.60 ha converted shall to water reservoir.)

		reservoir.)	
Road	0.6	0.01	0.01
Safety Zone (Plantation)	0.0	0.86 (Plantation)	0.86 (Plantation)
Total	0.6	2.62	0.01
Unused Area	2.56	0.00	0.00
Total Lease Area	**2.62**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.86 ha	2150
2	Along Approach Road	:	210 m	420
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	13,35,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000

TOTAL	15,35,000	4,87,000

Note: *2670 plants * 500 Rs (for each plants including hedges and fences) = Rs. 13,35,000/-
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- (Including maintenance)

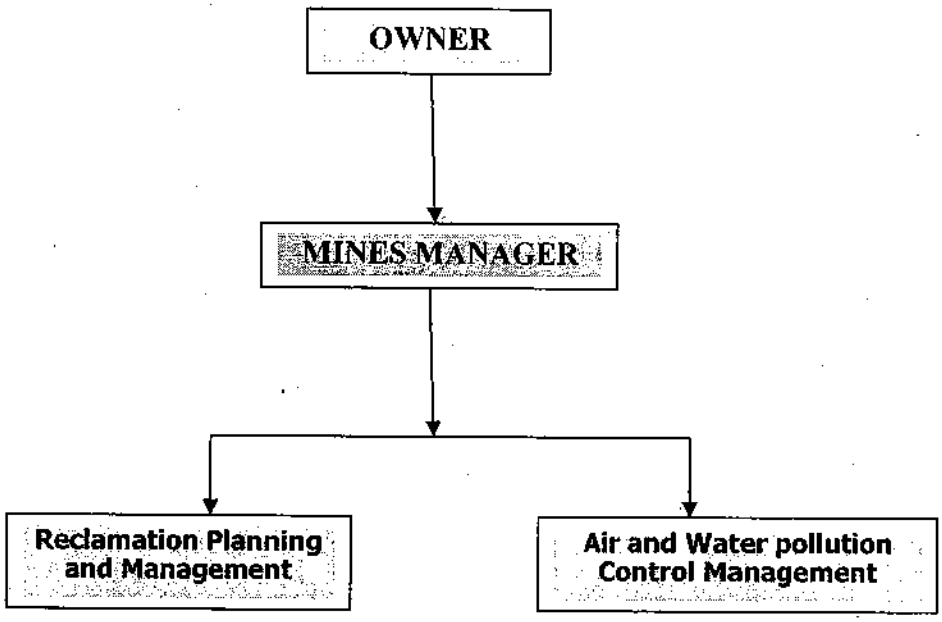
Environment Monitoring Programme

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

Pit layout has been shown in development plan & section and there is only 45434.45 cum waste generated during this plan period which is backfilling (with an average area 3786.20 m2 and depth 12m) in northern side.

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, thereby 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, injuryor 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

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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 Harmu & Khambha Stone Deposit of M/s Bhuneshwari Crusher Stone (Prop. : Shri Dwarika Nath Choudhary), Village : Harmu & Khambha, Anchal : Itki, Distt. : Ranchi, Jharkhand (2.62 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

22. **Chaprakocha Stone Deposit of M/s Hardrock Infra (Partners : (i) Shri Nitesh Sharda (ii) Mr. Moij Akhtar (iii) Shri Varun Lalwani), Mouza : Chaprakocha, Anchal : Ormanjhi, Distt. : Ranchi, Jharkhand (0.668 Ha).**

(Proposal no.: SIA/JH/MIN/ 526896 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 26676 cum/annum or 72025 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chaprakocha Stone Deposit	
2	Lessee:	:	M/S Hardrock Infra Partner- 1. Sri Nitesh Sharda S/o Sri N K Sharda R/o- Flat No-101 Kishan Apartment, PP Compound, Dist.-Ranchi, Jharkhand 2. Sri Moij Akhtar S/o Shameem Akhtar R/o- 64, HB Road,Tadapkhana,Near Masjid Tadapkhana Ranchi Dist.-Ranchi, Jharkhand & 3. Sri Varun Lalwani S/o Moti Lal Lalwani R/o- Imam Kothi, Shantman Nagar HB Road Kokar Ranchi	
3	Lease Address	:	Mouza – Chaprakocha, Anchal- Ormanjhi, District – Ranchi, Jharkhand	
4	Lease Area	:	0.668 ha.	Acres-1.65 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 90.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 13.675 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	78,128.14 cum	210946 tonnes
10	Mine Life	:	04 years	
11	Man power	:	15	
12	Water Requirement	:	9.61~9.70 KLD (Drinking: 0.15 KLD, Dust Suppression: 5.27 KLD, Plantation: 4.19 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	:	Doma Nadi, Approx. 2.66 km towards South direction of mine site.	
17	Nearest Habitation	:	Chaprakocha village approx. 463 meters SW direction of mine site	
18	Nearest Railway	:	Sidhwar Railway Station, approx. 8.0 km towards ENE direction.	

	Station		
19	Nearest Airport	:	Birsa Munda Airport, Ranchi approx. 26 km towards SW direction.
20	Nearest Forest	:	Protected Forest Approx. 1.0 km towards SE direction of mine site. Protected Forest Approx. 1.20 km towards North direction of mine site. Protected Forest Approx. 2.80 km towards SW direction of mine site. Dense jungle mainly sal Approx. 3.50 km towards West direction of mine site.
21	Road & Highways	:	NH-20, Approx. 4.18 km in ESE direction.

CO-ORDINATES

1	Latitude	:	From 23°31' 3.75" N	To 23°31' 6.510" N
2	Longitude	:	From 85°27' 6.09" E	To 85°27' 11.642" E

LAND DETAILS

Khata no.	Plot no.
62	72, 73 (P) & 74 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 1330/M, dated 24.11.2022.
2	CO	:	The CO, Ormanjhi, Ranchi vide letter no. 423 (ii), dated 06.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ranchi vide memo no. 289/M, dated 27.02.2025 certified that 03 other mining area (4.50 Acre, 2.10 Acre & 3.84 Acre) exists within 500 meters radius from proposed project site and total area is 12.09 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 1101, dated 18.10.2023 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. 4019, dated 17.10.2023 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 (Sl. no. 04, Page no. 62).
7	Gram Sabha	:	BDO, Ormanjhi, Ranchi vide letter no. 1286 (ii), dated 13.10.2023 informed that Gram Sabha conducted on 09.10.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Ranchi vide Memo No. 181/M, dated 05.02.2025.
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	:	0.668 Ha. Or 1.65 Acre	Life of Mine – 04 years
3	Waste Generation	:	Total 7872 cum waste shall be generated during this plan period.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	670 AMSL to 680 AMSL	
8	Ground Level Elevation	:	670 AMSL	
9	Ultimate Working Depth	:	650 AMSL (20 m bgl)	
10	Water Table	:	617-620AMSL (50-53 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	110 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
1st Year	4560	12312	1600	240	1840	674-674
2nd Year	20292	54788	1200	1068	2268	668-662
3rd Year	26600	71820	0	1400	1400	662-656
4th Year	26676	72025	960	1404	2364	668-650
Total	**78128**	**210946**	**3760**	**4112**	**7872**	-

Land Use

Pattern of Utilization	Existing (Ha)	Land Use pattern after five years plan period (Ha)	Land Use pattern after life of the mine (Ha)
Excavation	0.86	0.382 (0.072ha area shall be Backfilled, 0.31 ha converted in to water reservoir)	0.382 (0.072ha area shall be Backfilled, 0.31 ha converted in to water reservoir)
Waste Dump	0.0	Nil (waste dump to be removed and backfilled).	Nil (waste dump to be removed and backfilled).
Road	0.0	0.0	0.0
Infrastructure (Crusher)	0.0	0.0	0.0
Safety Zone Plantation	0.0	0.286	0.286
Total	0.086	0.668	0.668
Unused Area	0.582	0.00	0.00
Total Lease Area	**0.668**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.286 ha	715
2	Along Approach Road	:	640 m	1280
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	10,47,500	1,00,000
4	Construction and maintenance of haul road	3,20,000	1,50,000
TOTAL		**13,67,500**	**4,87,000**

Note: * 2095 plants * 500 Rs (for each plants including hedges and fences) = Rs. 10.475 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 * 0.64 km 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

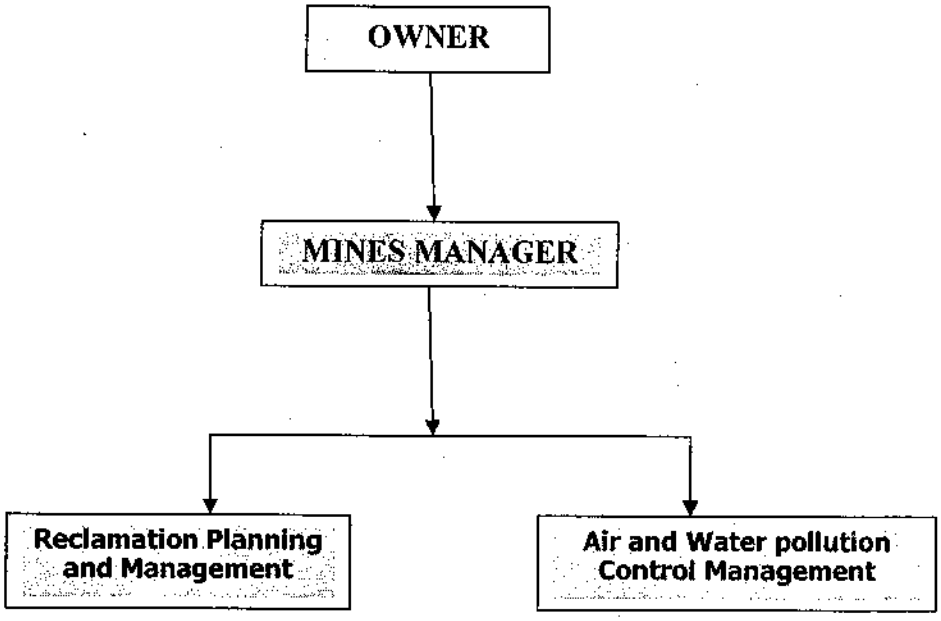
Solid Waste Management

Total 7872 cum waste (Overburden 3760cum and Intercalated waste 4112cum) shall be generated during this plan period.

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 7872 cum in-situ, 9840 cum loose & 8364 cum compact waste shall be generated. During the first year 595 cum waste shall be utilized for backfilling of excavated part of safety zone in western part and 1245 cum waste and generated waste from 2nd year to 3rd year shall be temporarily

dumped in the central part of the applied lease area and during fourth year the generated waste and waste materials of temporary dump shall be removed and used for backfilling of exhausted part of quarry in southern part and it will cover 0.072ha.

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.

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- 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, thereby 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, injuryor 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 Chaprakocha Stone Deposit of M/s Hardrock Infra (Partners : (i) Shri Nitesh Sharda (ii) Mr. Moij Akhtar (iii) Shri Varun Lalwani), Mouza : Chaprakocha, Anchal : Ormanjhi, Distt. : Ranchi, Jharkhand (0.668 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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23. Kanhaidih Stone Deposit of Shri Balram Kumar Agarwal, Mouza : Kanhaidih, Thana : Tundi, Distt. : Dhanbad, Jharkhand (2.137 Ha).

(Proposal no.: SIA/JH/MIN/ 521727 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity 61277.85 cum/annum or 165450.20 TPA

<u>Project and Location Details:</u>

Sl	Parameter		Details
1	Project Name	:	Kanhaidih Stone Deposit

2	Lessee:	:	Sri Balram Kumar Agarwal S/o – Sri Sambhunath Agarwal Address- Near Police Station, G.T. Road, PO+P.S.-Govindpur, Dhanbad	
3	Lease Address	:	Village – Kanhaidih, Anchal - Tundi, District - Dhanbad, Jharkhand	
4	Lease Area	:	2.137 Ha.	Acre 5.28 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 80.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 16.75 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	612769.95 cum	1654478.87 tonnes
10	Mine Life	:	10 years	
11	Man power	:	17	
12	Water Requirement	:	12.09~ 12.10 KLD (Drinking: 0.17 KLD, Dust Suppression: 6.5 KLD, Plantation: 5.42 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	:	Khudia Nadi, Approx. 3.68 km towards SW direction of mine site.	
17	Nearest Habitation	:	Dhakjora village approx. 226 meters SW direction of mine site	
18	Nearest Railway Station	:	Dhanbad junction, approx 14.35 km in SW direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 63.90 km in NNE direction.	
20	Nearest Forest	:	Reserve Forest Approx. 4.45 km towards East direction of mine site. Protected Forest Approx. 4.53 km towards NW direction of mine site. Reserve Forest Approx. 3.50 km towards NE direction of mine site.	
21	Road & Highways	:	SH-13, Approx. 0.71 km in NE direction.	

CO-ORDINATES

1	Latitude	:	From 24°53'48.98724" N	To 24°53'55.40186" N
2	Longitude	:	From 86°30'34.26721" E	To 86°30'40.78922" E

LAND DETAILS

Khata no.	Plot no.
195	1780, 1781, 1782, 1783, 1785, 1791 & 1792

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STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dhanbad vide letter no. 1112/M, dated 26.07.2024.
2	CO	:	The CO, Tundi, Dhanbad vide letter no. 478, dated 12.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 54/M, dated 21.01.2025 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. 657, dated 12.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dhanbad Forest Division vide letter no. 3004, dated 10.10.2023 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 Dhanbad District (Sl. no. 19, Page no. 78).
7	Gram Sabha	:	Gram Sabha conducted on 22.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 1720/M, dated 19.11.2024.
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	:	2.137 Ha or 5.28 Acres	Life of Mine – 10 years
3	Waste Generation	:	Total 57750.60 cum waste (Overburden 42039.00 cum and Intercalated waste 15711.60 cum) shall be generated during this plan period.	
4	Stripping Ratio	:	1: 0.4	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	216 AMSL to 223 AMSL	
8	Ground Level Elevation	:	216 AMSL	
9	Ultimate Working Depth	:	180 AMSL (36 m bgl)	
10	Water Table	:	170 AMSL (46 m bgl)	

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11	Topography of Mine	:	Area represents a small hillock.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	130 litre/day

Production Details

Year	Overburden in cum	Intercalated Waste in cum	Total Waste in cum	Production of stone in cum	Production of stone in Tonnes	Bench (AMSL)
1st	27498.00	3156.75	30654.75	59978.25	161941.28	216-210
2nd	0.00	3177.90	3177.90	60380.10	163026.27	210-204
3rd	000	3213.00	3213.00	61047.00	164826.90	204-198
4th	000	2938.80	2938.80	55837.20	150760.44	198-186
5th	14541.00	3225.15	17766.15	61277.85	165450.20	216-210
Total	**42039.00**	**15711.60**	**57750.60**	**298520.40**	**806005.08**	-

Land Use

Type of Land	Present Land Use (In Ha)	At the End of the Five year Plan Period (In Ha)	Conceptual Period (In Ha)
Quarry	0.00	1.605 (0.083 ha area shall be backfilled)	1.605 (0.262 ha area shall be Backfilled, 1.343 ha converted in to water reservoir)
Waste Dump	0.00	Nil (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Road	0.00	0.00	0.00
Infrastructure (Crusher)	0.00	0.00	0.00
Safety Zone Plantation	0.00	0.532 (Plantation)	0.532 (Plantation)
Total	0.00	2.137	2.137
Unused Area	2.137	0.00	0.00
Total Lease Area	**2.137**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.532 ha	1330
2	Along Approach Road	:	640 m	1280
3	No. of plants distributed with consultation local authorities	:	--	100

	/village Panchayat			

- 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	13,55,000	1,00,000
4	Construction and maintenance of haul road	3,20,000	1,50,000
TOTAL		**16,75,000**	**4,87,000**

Note: * 2,710 plants * 500 Rs (for each plants including hedges and fences) = 13.55 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300*300 = 90,000/- or 1,50,000/-
**** 5.0 lakh per kilometer (500000 * 0.640 km haul road = 3,20,000/-)***

Environment Monitoring Programme

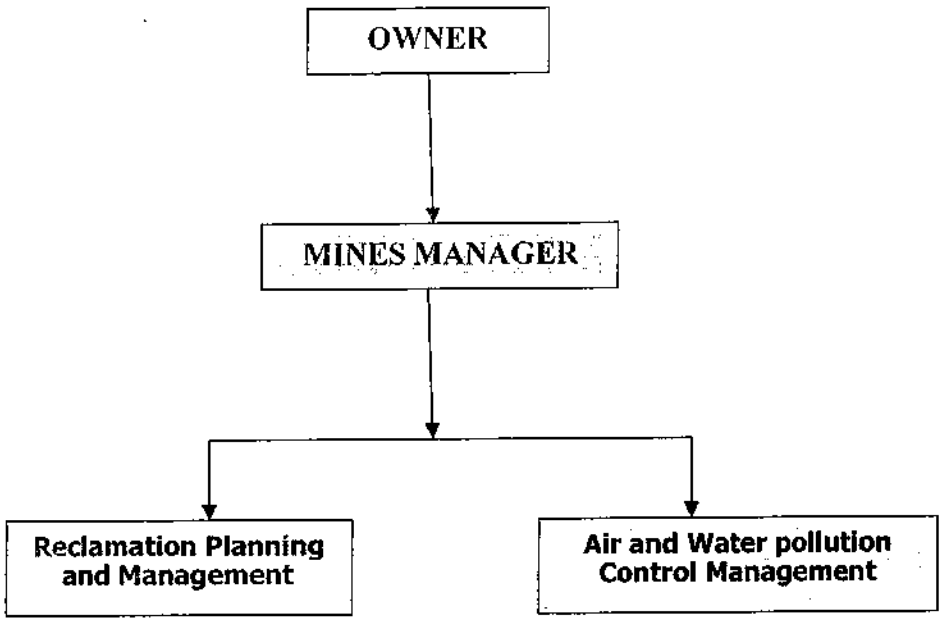
Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 57750.60 cum waste (Overburden 42039.00 cum and Intercalated waste 15711.60 cum) shall be generated during this plan period.

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 57750.60 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 28875.30 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 28875.30 cum insitu 36094.13 cum loose & 30680.01 cum compact waste shall be temporary dumped in southern part during first to fourth year, 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 northern part and it will cover 0.083ha.

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, thereby requiring immediate cessation of the unsafe

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		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, injuryor 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 Kanhaidih Stone Deposit of Shri Balram Kumar Agarwal, Mouza : Kanhaidih, Thana : Tundi, Distt. : Dhanbad, Jharkhand (2.137 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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24. Nichitpur Stone Deposit of M/s Dipak Enterprises (Partners : Shri Dipak Kumar Mahato & Shri Abhirup Shourya), Mouza : Nichitpur, Anchal : Gobindpur, Distt. : Dhanbad, Jharkhand (1.093 Ha).

(Proposal no.: SIA/JH/MIN/ 522200 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 11115.0 cum/annum or 30010.50 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Nichitpur Stone Deposit	
2	Lessee:	:	M/s Dipak Enterprises Partner- Sri Dipak Kumar Mahato & Sri Abhirup Shourya	
3	Lease Address	:	Mouza - Nichitpur, Anchal - Gobindpur, District – Dhanbad, State- Jharkhand	
4	Lease Area	:	1.093 ha.	Acres- 2.70 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 60.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 10.86 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	103151 cum	278507.70 tonnes
10	Mine Life	:	9.3 or 10 years	
11	Man power	:	15	
12	Water Requirement	:	7.70~ 8.0 KLD (Drinking: 0.15 KLD, Dust Suppression: 4.01 KLD, Plantation: 3.53 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	:	Jauria Nala, Approx. 3.70 km towards West direction of mine site.	
17	Nearest Habitation	:	Nichitpur village approx. 270 meters SSW direction of mine site	
18	Nearest Railway Station	:	Dhanbad Railway Station, approx. 13.27 km towards SW direction	
19	Nearest Airport	:	Birsa Munda Airport, Ranchi approx. 136.0 km towards WSW direction.	
20	Nearest Forest	:	Reserve Forest, Approx. 4.0 km towards NE direction of mine site. Reserve Forest, Approx. 4.50 km towards ENE direction of mine site. Open mainly sal jungle, Approx. 4.70 km towards NNE direction of mine site.	
21	Road & Highways	:	SH-13, Approx. 1.0 km in ENE direction	

CO-ORDINATES

1	Latitude	:	From 23°53'07.13195"N	To 23°53' 12.79957"N
2	Longitude	:	From 86° 30' 37.06009"E	To 86°30' 42.37513"E

LAND DETAILS

Khata no.	Plot no.
120, 8, 6 & 4	328, 414, 415, 417, 329, 418, 419, 702, 703, 704, 705, 706, 420 & 700

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dhanbad vide letter no. 1133/M, dated 31.07.2024.
2	CO	:	The CO, Gobindpur, Dhanbad vide letter no. 1271, dated 01.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 114/M, dated 30.01.2025 certified that 01 other mining lease area (2.67 Acre) exists within 500 meters radius from proposed project site and total area is 5.37 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1927, dated 26.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dhanbad Forest Division vide letter no. 2443, dated 17.08.2023 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 Dhanbad District (Sl. no. 23, Page no. 80).
7	Gram Sabha	:	Gram Sabha conducted on 07.08.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 1741/M, dated 22.11.2024.
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	:	1.093 Ha. Or 2.70 Acre	Life of Mine – 9.3 or 10 years
3	Waste Generation	:	Total 15473.20 cum in-situ 19341.50 cum loose & 16440.28 cum compact waste shall be generated during this plan period.	
4	Stripping Ratio	:	1: 0.8	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	212 AMSL to 214 AMSL	
8	Ground Level Elevation	:	212 AMSL	
9	Ultimate Working Depth	:	190 AMSL (22 m bgl)	
10	Water Table	:	177-180 AMSL (32-35 m bgl)	
11	Topography of Mine	:	Area represents a small hillock	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	110 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
1st	10640.00	28728.00	6200.00	560.00	6760.00	208-202
2nd	11077.00	29907.90	2320.00	583.00	2903.00	208-202
3rd	10659.00	28779.30	1600.00	561.00	2161.00	208-202
4th	11099.80	29969.46	0.00	584.20	584.20	202-196
5th	11115.00	30010.50	2480.00	585.00	3065.00	208-190
Total	**54590.80**	**147395.16**	**12600.00**	**2873.20**	**15473.20**	

Land Use

Pattern of Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	0.522 (0.069 ha area shall be backfilled)	0.690 (Entire area will be converted into Rain water harvesting)
Waste Dump	0.0	Nil (waste dump to be removed and	Nil (waste dump to be removed and backfilled.

		backfilled)	
Road	-	0.010	0.00
Infrastructure(Crusher)	0.0	0.0	0.0
Safety Zone plantation	0.0	0.403 (plantation)	0.403 (plantation)
Total	**0.00**	**0.935**	**1.093**
Unused area	**1.093**	**0.158**	**0.00**
Total Lease Area	**1.093**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.403 ha	1008
2	Along Approach Road	:	332 m	664
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	8,86,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**10,86,000**	**4,87,000**

Note: *1772 plants * 500 Rs (for each plants including hedges and fences) = Rs. 8.86 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-or 1,50,000-(including maintenance)

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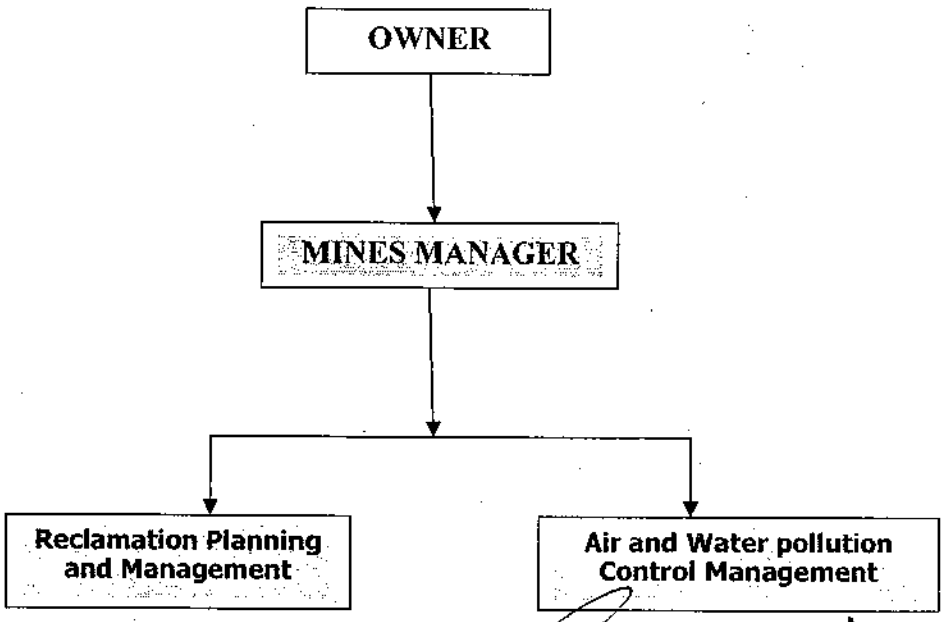
Organization Structure



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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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- 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, thereby 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, injuryor 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

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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

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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.
- 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 Nichitpur Stone Deposit of M/s Dipak Enterprises (Partners : Shri Dipak Kumar Mahato & Shri Abhirup Shourya), Mouza : Nichitpur, Anchal : Gobindpur, Distt. : Dhanbad, Jharkhand (1.093 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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25. Keshka Stone Block of Shri Tejnarayan Singh, Village : Keshka, Anchal : Tundi, Distt. : Dhanbad, Jharkhand (1.13 Ha).

(Proposal no.: SIA/JH/MIN/ 526734 /2025)

Name of the consultant : P & M Solution, Nodia, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 14945.4 cum/annum or 40352.58 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Keshka Stone Block	
2	Lessee:	:	Sri Tejnarayan Singh,S/o-Sri Mukhlal Singh	
3	Lease Address	:	Mouza – Keshka, Anchal - Tundi, District – Dhanbad, State–Jharkhand	
4	Lease Area	:	1.13 ha.	Acres- 2.80 Acres
5	Type of Land	:	Non-Forest (RaiyatiLand)	
6	Project Cost	:	Rs. 90 Lakhs	
7	EMP Budget	:	Capital: Rs. 6.425 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	149910cum	404757.00tons
10	Mine Life	:	7.0 years	
11	Man power	:	12	
12	Water Requirement	:	3.72~ 4.00 KLD(Drinking: 0.12 KLD, Dust Suppression: 1.83 KLD, Plantation: 1.77 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	:	Khurdiya Nadi, Approx. 5.60 km. in SE direction of mine site.	
17	Nearest Habitation	:	Keshka village approx. 500meters NEdirection of mine site	
18	Nearest Railway Station	:	Tetulmari Railway Station, approx 12.46 km in SW direction	
19	Nearest Airport	:	Birsa Munda Airport, Ranchi approx. 66.82 km towards NNE direction.	
20	Nearest Forest	:	Open Scrub , Approx. 2.0 km. in SSE direction of mine site. Open Scrub, Approx. 3.00 km. in NW direction of mine site.	

21	Road & Highways	:	NH-19, Approx. 5.63 km in SSW direction.

CO-ORDINATES

1	Latitude	:	From 23°54'16.66"N	To 23°54'21.02"N
2	Longitude	:	From 86°24'59.94"E	To 86°25'07.42"E

LAND DETAILS

Khata no.	Plot no.
42	21 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director, Mines, Department of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni (Nilami)-76/2022/2076, dated 30.09.2022.
2	CO	:	The CO, Tundi (Dhanbad) vide letter no. 158, dated 15.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 24/M, dated 11.01.2025 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. 1236, dated 28.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dhanbad Forest Division vide letter no. 1700, dated 17.06.2023 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 Dhanbad District (Sl. no. 04, Page no. 18).
7	Gram Sabha	:	Gram Sabha conducted on 12.08.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 1503/M, dated 20.09.2024.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed

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			that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.13 Ha or 2.80 Acres	Life of Mine –7.0 years
3	Waste Generation	:	There will be few wastes, approximately 3762.2 cu m, which are used for construction of approach road and also use for road fillings.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	280AMSL to 274 AMSL	
8	Ground Level Elevation	:	274 AMSL	
9	Ultimate Working Depth	:	262AMSL (12 m bgl)	
10	Water Table	:	225-227 AMSL (47-49 m bgl)	
11	Topography of Mine	:	Area represents a small hillock	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Bench AMSL
1st	10,249.74	30749.22	280-274
2nd	11,634.84	34904.52	280-274
3rd	13,450.86	40352.58	280-268
4th	12,106.8	36320.40	274-268
5th	10,444.68	31334.04	274-262
Total	**57886.92**	**173660.76**	

Land Use

Type of land use	Existing (ha)	During Plan Period (ha)	During Conceptual Period/ after closure of Mines (ha)
Quarry	0.43	0.87	0.92
Approach roads	0.01	Nil	Nil
Garland drain	Nil	0.04	Nil
Safety Zone /Green Belt	0.0	0.21 (Plantation)	0.21 (Plantation)

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Settling Tank	Nil	0.01	Nil
Total	0.44	1.13	1.13
Barren	0.69	Nil	Nil
Total Lease Area	**1.13**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.21ha	**525**
2	Along Approach Road	:	130 m	260
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	4,42,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**6,42,500**	**4,87,000**

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Note: **885 plants *500 Rs (for each plants including hedges and fences) = 4.425 lakhs*
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
300 300 = 90000/- ~ 1,50,000/- (including maintenance)*

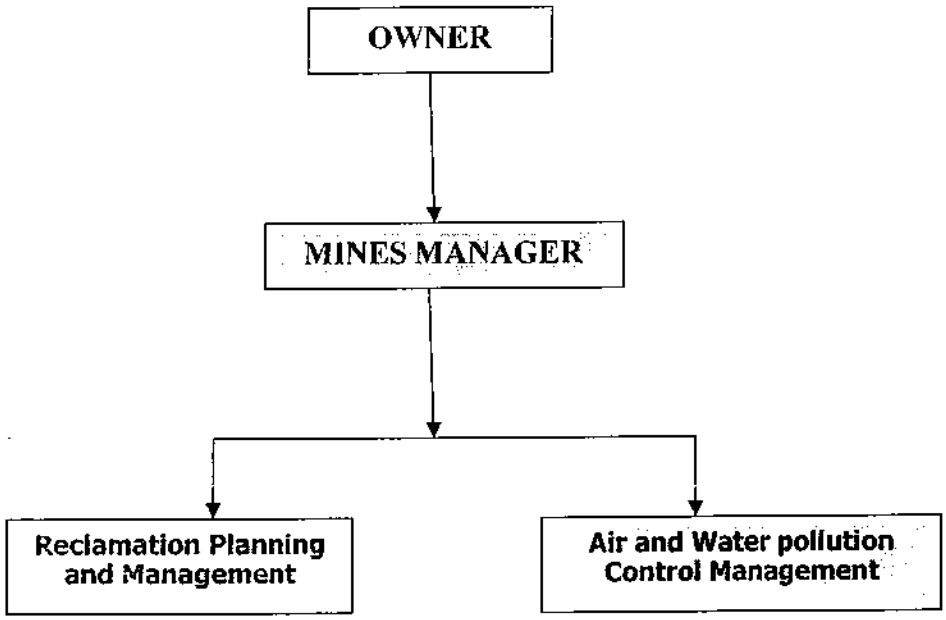
Environment Monitoring Programme

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

There will be few wastes, approximately 3,762.2 cu m, which are used for construction of approach road and also use for road fillings.

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.

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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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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**
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C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

S. No.	Rating	Scale
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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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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 Keshka Stone Block of Shri Tejnarayan Singh, Village : Keshka, Anchal : Tundi, Distt. : Dhanbad, Jharkhand (1.13 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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.

****

26. Machhyadaha Stone Deposit of Partners : Shri Tulsi Kumar Pandey & Shri Basudev Mehta, Mouza : Machhyadaha, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (1.53 Ha).

(Proposal no.: SIA/JH/MIN/ 522591 /2025)

Name of the consultant : P & M Solution, Nodia, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 23370 cum/annum or 63099 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Machhyadaha Stone Deposit	
2	Lessee:	:	1) Partner: Sri Tulsi Kumar Pandey 2) Partner: Sri Basudev Mehta	
3	Lease Address	:	Mouza - Machhyadaha, Thana - Topchanchi, District – Dhanbad, State- Jharkhand	
4	Lease Area	:	1.53 ha.	Acres- 3.77 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 70.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 15.65 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	233700 cum	630990.00 tonnes
10	Mine Life	:	10 years	
11	Man power	:	27	
12	Water Requirement	:	9.17~9.20 KLD (Drinking: 0.27 KLD, Dust Suppression: 4.06 KLD, Plantation: 2.60 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	:	Jamunia River, Approx. 2.60 km towards WSW direction of mine site	
17	Nearest Habitation	:	Karkota village approx. 511 meters WSW direction of mine site	
18	Nearest Railway Station	:	Gomoh Railway Station, approx. 3.10 km towards SSE direction	
19	Nearest Airport	:	Birsa Munda Airport, Ranchi approx. 105.50 km towards SW direction	
20	Nearest Forest	:	Protected Forest, Approx. 1.20 km towards ENE direction of mine site. Protected Forest, Approx. 2.50 km towards East direction of mine site.	

			Protected Forest, Approx. 4.50 km towards ESE direction of mine site. Protected Forest, Approx. 1.70 km towards SE direction of mine site.
21	Road & Highways	:	NH-19, Approx. 2.20 km in North direction.

CO-ORDINATES

1	Latitude	:	From 23°53'56.22"N	To 23°53'55.84"N
2	Longitude	:	From 86°08'37.27"E	To 86°08'36.76"E

LAND DETAILS

Khata no.	Plot no.
55	38

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Dhanbad vide letter no. 1599/M, dated 14.10.2024.
2	CO	:	The CO, Topchanchi (Dhanbad) vide letter no. 140, dated 03.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 85/M, dated 24.01.2025 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. 730, dated 10.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dhanbad Forest Division vide letter no. 1742, dated 21.06.2023 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 Dhanbad District (Sl. no. 7, Page no. 61).
7	Gram Sabha	:	Gram Sabha conducted on 17.08.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 31/M, dated 16.01.2025.

9	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	1.53 Ha. Or 3.77 Acre	Life of Mine –10 years
3	Waste Generation	:	Total 6872.60 cum waste generated during this scheme period.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	240 AMSL to 241 AMSL	
8	Ground Level Elevation	:	240 AMSL	
9	Ultimate Working Depth	:	210 AMSL (30 m bgl)	
10	Water Table	:	195-197 AMSL (43-45 m bgl)	
11	Topography of Mine	:	Area represents an undulating topography	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	120 litre/day	

Production Details

Year	Production of Stone in cum	Production of Stone in tones	Waste (cum) in plan period	Waste (cum) in ultimate	Bench AMSL
1st	22800.00	61560.00	(1200+653) =1853.00	6538.40	240-234
2nd	23362.40	63078.48	1229.60		240-228
3rd	23370.00	63099.00	(1230+421) =1651.00		234-228
4th	19779.00	53403.30	1041.00		234-222
5th	20862.00	56327.40	1098.00		222-210
Total	**110173.4**	**297468.18**	**6872.60**	**6538.40**	

Land Use

Pattern of Utilization	Existing (Ha)	Land Use pattern after five years plan period (Ha)	Land Use pattern after life of the mine (Ha)
Quarry	-	0.93	1.17 (Entire area will be

			converted into Rain water harvesting)
Mine Road	0.01	Comes under qry.	Comes under qry.
Plantation (S.Z)	-	**0.36 (Plantation)**	**0.36 (Plantation)**
Total	**0.01**	**1.29**	**1.53**
Balance	1.52	0.24	-
Total Lease Area	**1.53**	**1.53**	**1.53**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.36 ha	900
2	Along Approach Road	:	/10 m	1420
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	12,10,000	1,00,000

4	Construction and maintenance of haul road	3,55,000	1,50,000
TOTAL		**15,65,000**	**4,87,000**

Note: * 2420 plants * 500 Rs (for each plants including hedges and fences) = Rs. 12.10 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 * 0.71 km haul road = 3,55,000/)***

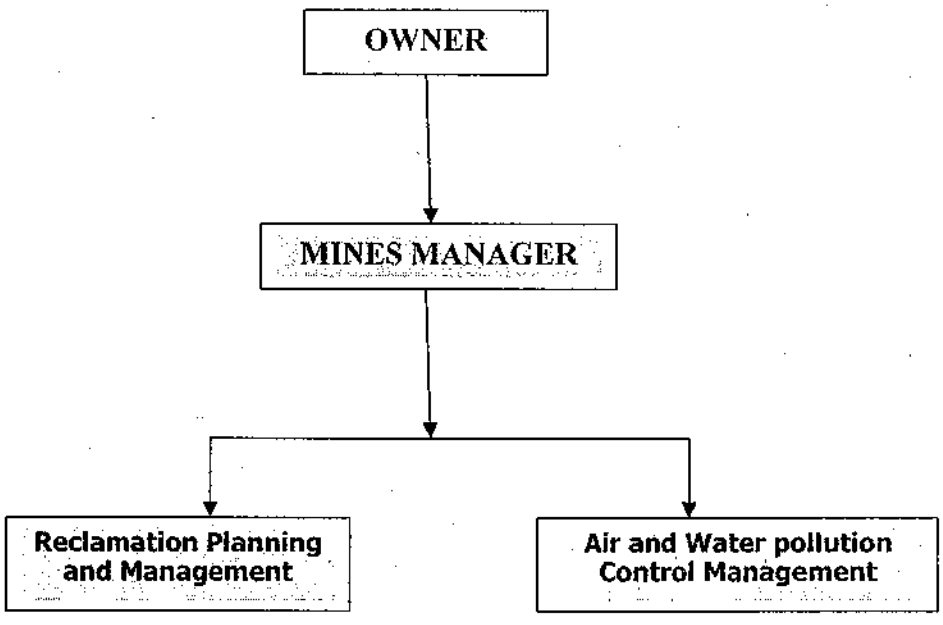
Environment Monitoring Programme

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

Pit layout has been shown in development plan & section and there is only 6872.60 cum waste generated during this scheme period and 6538.40 cum in ultimate stage which is used for village & haul road maintenance.

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, thereby 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, injuryor 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

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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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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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in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

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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 Machhyadaha Stone Deposit of Partners : Shri Tulsi Kumar Pandey & Shri Basudev Mehta, Mouza : Machhyadaha, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (1.53 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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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27. **Garga Stone Mine of Shri Asit Kumar Mandal & Md. Azad Ansari, Village : Garga, Thana : Nirsa, Distt. : Dhanbad, Jharkhand (1.57 Ha).**

(Proposal no.: SIA/JH/MIN/ 518942 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

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

The project has been granted EC by DEIAA, Dhanbad vide letter no. EC/DEIAA/2016-17/13, dated 17.01.2017.

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, Dhanbad which has been taken up for consideration on 11.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. memo no. 1233/M, dated 31.07.2023 and memo no. 1806/M, dated 09.12.2024 by DMO, Dhanbad is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 72, dated 20.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 20004 cum/annum or 60012 TPA.**

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Garga Stone Mine	
2	Lessee:	:	Sri Asit Kumar Mandal & Md. Azad Ansari	
3	Lease Address	:	Mauza – Garga, Thana – Nirsa, District – Dhanbad, State- Jharkhand.	
4	Lease Area	:	1.57 ha	Acres- 3.90 Acres
5	Type of Land	:	Non-Forest (Pvt. Raity Land)	
6	Project Cost	:	Rs. 1.0 cr.	
7	EMP Budget	:	Capital: Rs. 6.80Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	181794.16 cum	545382.50 tons
10	Mine Life	:	Upto the lease period i.e. 05.11.2017 to 04.11.2027.	
11	Man power	:	15	
12	Water Requirement	:	7.20~ 7.50 KLD (Drinking: 0.15 KLD, Dust Suppression: 5.17 KLD, Plantation: 1.88 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	:	Ganga River, Ganga River, Approx. 3.50 km in North direction.	
17	Nearest Habitation	:	Garga village, Approx. 0.47 km in NNE direction	
18	Nearest Railway Station	:	Jamtara Railway station, Approx. 18.40 km towards ENE direction. .	
19	Nearest Air Port	:	Deoghar Airport, Approx. 62.00 km towards North direction.	
20	Nearest Forest	:	Reserve Forest, Approx. 2.50 km towards West direction of mine site. Reserve Forest, Approx. 3.0 km towards WSW direction of mine site.	
21	Road & Highways	:	NH-419, Approx. 2.70 km towards west direction.	

CO-ORDINATES

1	Latitude	:	From 23°53'46.44"N	To 23°53'53.50"N
2	Longitude	:	From 86°38'15.06"E	To 86°38'22.75"E

LAND DETAILS

Khata no.	Plot no.
72 (Old) & 159 (New)	240 (Old) and 361 (New)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 05.11.2017 to 04.11.2027.
2	CO	:	The CO, Nirsa vide letter no. 464, dated 13.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Dhanbad vide memo no. 1805/M, dated 09.12.2024 certified that 01 other mining lease area (7.00 Acre) exists within 500 meters radius from proposed project site and total area is 10.90 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2047, dated 06.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Dhanbad Forest Divisioin vide letter no. 2220, dated 27.07.2023 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 Dhanbad District (Sl. No. 17, Page no. 117).
7	Gram Sabha	:	Gram Sabha conducted on 28.04.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Dhanbad vide memo no. 1789/M, dated 03.12.2024.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Dhanbad vide letter no. EC/DEIAA/2016-17/13, dated 17.01.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 72, dated 20.01.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2011664 /2018/177, dated 14.02.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DHN/CTO-8861763 /2020/82, dated 12.11.2020.
13	Production Report	:	Production report issued by DMO, Dhanbad vide memo no. 1233/M, dated 31.07.2023 and memo no. 1806/M, dated 09.12.2024.
14	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.003.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized mining method	
2	Quarry Area	:	1.57 ha or 3.90 Acres	Life of Mine – Upto the lease period i.e. 05.11.2017 to 04.11.2027.
3	Waste Generation	:	Small amount of generated waste will be used for constructing approach road.	
4	Stripping Ratio	:	01:0.1	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	212 AMSL to 205 AMSL	
8	Ground Level Elevation	:	200 AMSL	
9	Ultimate Working Depth	:	176 AMSL (28 mbgl)	
10	Water Table	:	170-165AMSL (34-39 mbgl)	
11	Topography of Mine	:	The lease area represents undulating topography covered by basalt.	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production in EC In Tons	Production of Stone in Cum	Production of Stone in Tons	Bench AMSL
1st Year	60012	36000	108000	188-182
2nd Year	60012	36000	108000	182-182
3rd Year	60012	36000	108000	182-176
4th Year	60012	36000	108000	182-176

As per approved mine plan production: - 36000 cum/annum or 108000 TPA

As per EC letter production: - 20004 cum/annum or 60012 TPA.

Land Use

Category	Existing Land Use (in Ha)	During Plan period (in Ha)	After Life of Mine (in Ha)
Quarry	0.95	0.95	1.03 (Entire area will be left as water Reservoir)
Infrastructure	Nil	0.01	Nil
Road	0.03	0.01	0.01
Garland drain	Nil	0.06	Nil
Safety Barrier	0.53	0.53	0.53

1122

	(Plantation)	(Plantation)	(Plantation)
Settling Tank	Nil	0.01	Nil
Total area in use	**1.51**	**1.57**	**1.57**
Balanced Unused Area	0.06	0.0	0.0
Total Lease area	**1.57**	**1.57**	**1.57**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.53 ha	1325 (Already done during previous year of mining)
2	Along Approach Road	:	420 m	840
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 2265 saplings were proposed to be planted. Out of which 1325 plant in Safety Zone area have been planted during previous year of mining.
(840 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 940 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	4,70,000	1,00,000
4	Construction and maintenance of haul road	2,10,000	1,50,000
TOTAL		**6,80,000**	**4,87,000**

*Note: *940 plants * 500 Rs (for each plants including hedges and fences) = 4.70 Lakh*
A total of 2265 saplings were proposed to be planted. Out of which 1325 plant in Safety Zone area have been planted during previous year of mining.
(840 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 940 Plants).
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
300 300 = 90000/- or 1,50,000/- (including maintenance material)*
** 5.0 lakh per kilometer (500000 * 0.42 km haul road = 2,10,000/)*

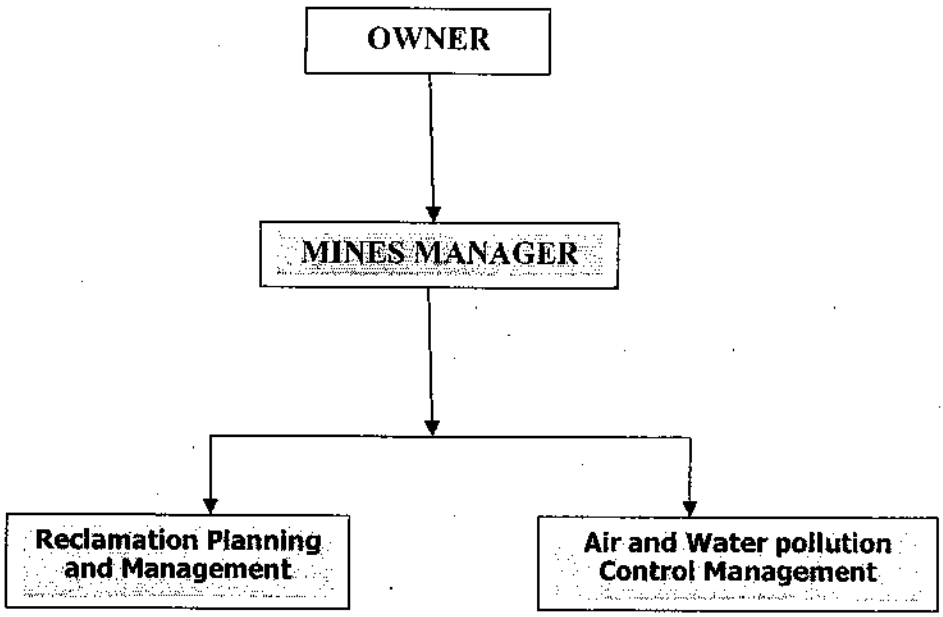
Environment Monitoring Programme

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

The small quantity of waste will be dumped in the lease area with suitable precautions in the plan period and will be used for backfilling in plan and conceptual periods.

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, thereby 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, injuryor 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 Garga Stone Mine of Shri Asit Kumar Mandal & Md. Azad Ansari, Village : Garga, Thana : Nirsa, Distt. : Dhanbad, Jharkhand (1.57 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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28. **Khurdih Stone Deposit of Shri Himanshu Kedia, Village : Khurdih, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (2.17 Ha).**

(Proposal no.: SIA/JH/MIN/ 527337 /2025)

Name of the consultant : P & M Solution, Nodia, U.P.

This is a new project which has been taken for appraisal on 11.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 36708.00 cum/annum or 99111.60 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Khurdih Stone Deposit	
2	Lessee:	:	Sri Himanshu Kedia, S/o -Sri Dindayal Kedia	
3	Lease Address	:	Village – Khurdih, Thana- Topchanchi District – Dhanbad, State- Jharkhand	
4	Lease Area	:	2.17 ha.	Acres-5.36 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 110.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 14.675 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	366633.50 cum	989910.45 tonnes
10	Mine Life	:	10 years	
11	Man power	:	21	
12	Water Requirement	:	10.71 ~11.00 KLD (Drinking: 0.21 KLD, Dust Suppression: 5.67 KLD, Plantation: 4.83 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	:	Katri Nadi, Approx. 2.50 km towards SW direction of mine site	
17	Nearest Habitation	:	Khurdih village approx. 370 meters East direction of mine site	
18	Nearest Railway Station	:	Nichitpur Railway station, approx. 7.0 km towards South direction.	
19	Nearest Airport	:	Birsa Munda Airport,Ranchi, 116.95 km towards SW direction.	
20	Nearest Forest	:	Tundi RF, Approx. 1.5 km towards East direction of mine site. Nara RF, Approx. 3.0 km towards NW direction of mine site.	
21	Road & Highways	:	AH-1, approx. 0.70 km in south direction.	

CO-ORDINATES

1	Latitude	:	From 23°53'30.39" N	To 23°53'37.38" N
2	Longitude	:	From 86°17'5.10" E	To 86°17'13.92" E

LAND DETAILS

Khata no.	Plot no.
5, 22, 53, 37, 31, 33, 55 & 67	1206 (P), 1210 (P), 1211 (P), 1212 (P), 1215 (P), 1216, 1218 (P), 1219 (P), 1393 (P), 1394 (P), 1398, 1399 (P) & 1400 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Dhanbad vide letter no. 150/M, dated 05.02.2025.
2	CO	:	The CO, Topchanchi (Dhanbad) vide letter no. 217, dated 10.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 164/M, dated 08.02.2025 certified that 02 other mining lease area (2.79 Acre & 3.58 Acre) exists within 500 meters radius from proposed project site and total area is 11.73 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 187, dated 15.02.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dhanbad Forest Division vide letter no. 2403, dated 12.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Dhanbad has been certified vide memo no. 163/M, dated 08.02.2025 that this project is mentioned in approved DSR of Dhanbad District as a potential area (Sl. no. 19, Page no. 158).
7	Gram Sabha	:	Gram Sabha conducted on 20.05.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 289/M, dated 27.02.2025.

9	Qualified Person	:	Shri Tapan Kumar Chakravarty 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	:	2.17 Ha. Or 5.36 Acre	Life of Mine –10 Years
3	Waste Generation	:	Total 9936.25 cum or 26827.87 tons waste generated during the plan period	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	255 AMSL to 261 AMSL	
8	Ground Level Elevation	:	255 AMSL	
9	Ultimate Working Depth	:	230 AMSL (25 m bgl)	
10	Water Table	:	222-220 AMSL (33-35 m bgl)	
11	Topography of Mine	:	Area represents an undulating topography.	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	120 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum) in plan period	Waste (cum) in ultimate	Bench AMSL
1st	36708.00	99111.60	2399.00	10211.85	261-254
2nd	36271.00	97931.70	1909.00		254-248
3rd	33843.75	91378.13	1781.25		254-248
4th	36499.00	98547.30	1921.00		248-242
5th	36601.60	98824.32	1926.40		248-236
Total	**179923.35**	**485793.05**	**9936.25**	**10211.85**	

Land Use

Type of land use	Existing (ha)	After End of plan Period	After Life of the Mine
QUARRY	0.53	1.01	1.66 (Entire area will be converted into Rain water harvesting.)
MINE ROAD	0.01	0.01	0.0 (comes under mining)
PLANTATION(S.Z.)	0.0	0.51 (Plantation)	0.51 (Plantation)
Total	0.54	1.53	2.17
Unused Area	1.63	0.64	0.00
Total Lease Area	2.17		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.51 ha	1275
2	Along Approach Road	:	520 m	1040
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- 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	12,07,500	1,00,000
4	Construction and maintenance of haul road	2,60,000	1,50,000
TOTAL		**14,67,500**	**4,87,000**

Note: * 2415 plants * 500 Rs (for each plants including hedges and fences) = Rs. 12,07,500/-
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 * 0.52km haul road = 2,60,000/-)

Environment Monitoring Programme

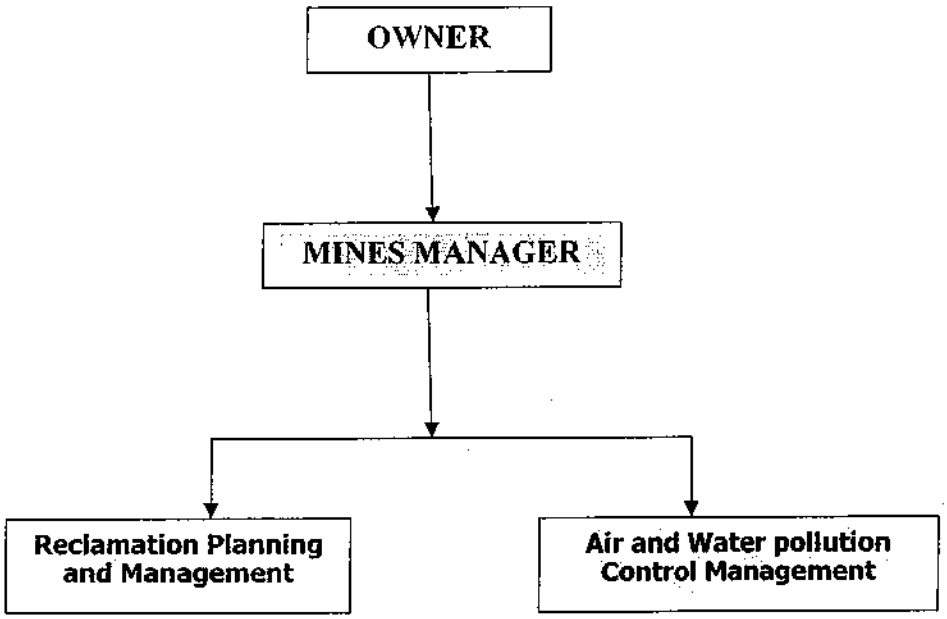
Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly

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 9936.25 cum or 26827.87 tons waste generated during the plan period. In Khurdih Stone Deposit, the lease area is devoid of any top soil generation. The stone is exposed throughout the area on the upper part of the hillocks. On that basis, 95% recovery of rock is considered and rest 5% intercalated waste & 1.00m overburden from surface level. The details of generation of waste during the plan period and ultimate stage are mentioned below-The Garland Drain & Retaining wall shall be constructed all around the waste dump. The dimension of the dump is 94mX20mX5.88m.

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,

		thereby 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, injuryor 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.
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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 Khurdih Stone Deposit of Shri Himanshu Kedia, Village : Khurdih, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (2.17 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

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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.

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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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29. Stone Mine of M/s Jharkhand Stone Works (Md. Irshad Ali), Mauza : Leba, Block : Taljhari, Distt. : Sahibganj, Jharkhand (2.83 Ha).

(Proposal no.: SIA/JH/MIN/ 513221 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

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/2017-18/288, dated 14.12.2017.

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 11.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 1322/M, dated 07.12.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2273, dated 16.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 41723 cum/annum or 125169TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	M/s Jharkhand Stone Works	
2	Lessee:	:	Occupier name – Md Irshad Ali	
3	Lease Address	:	Mauza – Leba, Block – Taljhari, District – Sahebganj, State- Jharkhand.	
4	Lease Area	:	2.83 ha	Acres- 7.0 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 1.30 cr.	
7	EMP Budget	:	Capital: Rs. 7.25 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	1249824 tons	4,16,608cum
10	Mine Life	:	Upto the lease period i.e. 11.02.2020 to 10.02.2030.	
11	Man power	:	24	
12	Water Requirement	:	8.14 ~ 9.00 KLD (Drinking: 0.24 KLD, Dust Suppression: 5.90 KLD, Plantation: 2.0 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	:	--	
17	Nearest Habitation	:	churi village, Approx.0.36 km in ESE direction	
18	Nearest Railway Station	:	Kalian Chak Railway Station, approx. 6.80 km towards East direction.	
19	Nearest Air Port	:	Deoghar Airport, Patna, approx. 117.60 km towards SW direction	
20	Nearest Forest	:	Fairly Dense Mixed Jungle , Approx. 3.80 km. in South direction. Fairly Dense Mixed Jungle , Approx. 4.80 km. in South direction.	
21	Road & Highways	:	SH-18, SH-18, Approx. 5.80 km. in west direction.	

CO-ORDINATES

1	Latitude	:	From 25°01'48.74"N	To 25°01'56.96"N
2	Longitude	:	From 84°40'12.82"E	To 87°40'22.61"E

LAND DETAILS

Khata no.	Plot no.
04	05 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 11.02.2020 to 10.02.2030.

2	CO	:	The CO, Taljhari vide letter no. 61, dated 07.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1321/M, dated 07.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 95, dated 13.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 1646, dated 28.08.2017 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. 38, Page no. 276).
7	Gram Sabha	:	Gram Sabha conducted on 02.08.2017.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Sahibganj vide letter no. 471, dated 02.05.2023.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/288, dated 14.12.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2273, dated 16.12.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-8292378 /2022/52, dated 03.02.2022.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-15520237 /2023/46, dated 20.03.2023.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1322/M, dated 07.12.2024.
14	Grid certificate	:	JSPCB vide memo no. 2273, dated 16.12.2024 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
15	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized mining method	
2	Quarry Area	:	2.83 ha or 7.0 Acres	Life of Mine – Upto the lease period i.e. 11.02.2020 to 10.02.2030.
3	Waste Generation	:	Very little amount of waste will be generated, which will be used in construction of approach road and back filling	
4	Stripping Ratio	:	01:0.1	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	153 AMSL to 153 AMSL	
8	Ground Level Elevation	:	153 AMSL	
9	Ultimate Working Depth	:	108 AMSL (45mbgl)	
10	Water Table	:	98-103AMSL (50-55mbgl)	
11	Topography of Mine	:	The lease area represents undulating topography covered by basalt.	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production Details

Year	Proposed Production of EC in Tons	Proposed Production of Stone in Cum	Proposed Production of Stone in Tons	Bench AMSL
1st Year	124986	41700	125100	162-144
2nd Year	124930	41700	125100	162-138
3rd Year	125031	41700	125100	162-132
4th Year	124947	41700	125100	162-126
5th Year	125169	41700	125100	162-120
Total	**625063**	**208500**	**625500**	

As per approved mine plan production: - 41723 cum/annum or 125169 TPA

As per EC letter production: 41700 cum/annum or 125100 TPA

Land Use

Category	Present Land Use (in Ha)	At the End of Plan Period (in Ha.)	At the End of mine (in Ha.)
Quarry	0.22	1.07	1.17 (Entire Area is

			converted as water reservoir)
Infrastructure	Nil	0.01	Nil
Road	0.01	0.01	Nil
Garland drain	Nil	0.08	Nil
Safety Zone	0.64 (Plantation)	0.64 (Plantation)	0.64 (Plantation)
Total area in use	**0.87**	**1.81**	**1.81**
Balanced Unused Area	1.96	1.02	1.02
Total Lease area	**2.83**	**2.83**	**2.83**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.64 ha	1600 (Already done during previous year of mining)
2	Along Approach Road	:	450 m	900
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: *A total of 2600 saplings were proposed to be planted. Out of which 1600 plant in Safety Zone area have been planted during previous year of mining.*
(900 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1000 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

1150

3	Plantation	5,00,000	1,00,000
4	Construction and maintenance of haul road	2,25,000	1,50,000
TOTAL		**7,25,000**	**4,87,000**

Note: *1000 plants * 500 Rs (for each plants including hedges and fences) = 5.0 Lakh
A total of 2000 saplings were proposed to be planted. Out of which 1000 plant in Safety Zone area have been planted during previous year of mining.
(900 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1000 Plants)
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 1,50,000/- (including maintenance material)
**** 5.0 lakh per kilometer (500000 * 0.45 km haul road =2,25,000/-)***

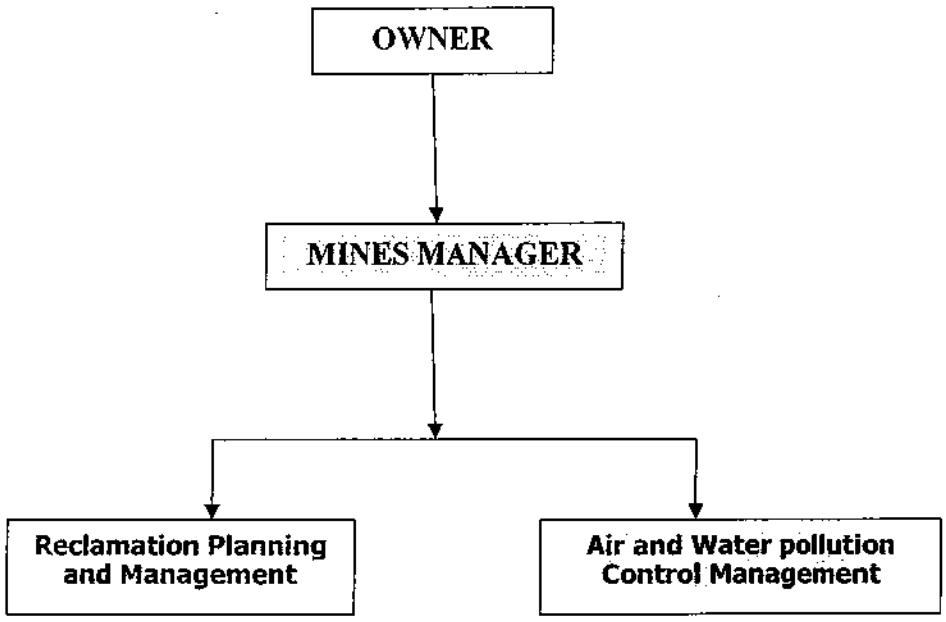
Environment Monitoring Programme

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

The small quantity of waste will be dumped in the lease area with suitable precautions in the plan period and will be used for backfilling in plan and conceptual periods.

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, thereby 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, injuryor 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 Stone Mine of M/s Jharkhand Stone Works (Md. Irshad Ali), Mauza : Leba, Block : Taljhari, Distt. : Sahibganj, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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30. Pakaria Stone Mine of M/s Sri Ram Stone Works (Prop. : Shri Tinkal Kumar Bhagat), Mauza : Pakaria, Thana : Mirzachouki, Distt. : Sahibganj, Jharkhand (2.428 Ha).

(Proposal no.: SIA/JH/MIN/ 513216 /2024)

Name of the consultant : P & M Solution, Noida, U.P.

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/2016-17/45, dated 27.03.2017.

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 11.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. 1209/M, dated 11.11.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 1942, dated 22.10.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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- 79391 cum/annum or 230234 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Pakaria Stone Mine	
2	Lessee:	:	M/s Sri Ram Stone Works. Prop.: Tinkal Kumar Bhagat	
3	Lease Address	:	Mauza – Pakaria, Thana -- Mirzachouki, District – Sahebganj, State- Jharkhand.	
4	Lease Area	:	2.428 ha	Acres- 6.00 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 1.30 cr.	
7	EMP Budget	:	Capital: Rs. 3.70 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	1147774.33 tons	395784.25 cum
10	Mine Life	:	Upto the lease period i.e. 13.10.2017 to 12.10.2027.	
11	Man power	:	34	
12	Water Requirement	:	6.18 ~6.20 KLD (Drinking: 0.34 KLD, Dust Suppression: 2.95 KLD, Plantation: 2.89 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	:	Ganga River , Approx. 7.64 km. in NE direction.	
17	Nearest Habitation	:	Pakria, Approx. 0.90 km in ENE direction	
18	Nearest Railway Station	:	Karamtola Railway Station, approx. 3.39 km towards NE direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 120.61 km towards SW direction.	
20	Nearest Forest	:	Protected forest, Approx. 2.20 km. in West direction. Protected forest, Approx. 1.80 km. in NW direction. Protected forest, Approx. 1.90 km. in NE direction.	
21	Road & Highways	:	NH-33, Approx. 3.61 km. in NE direction.	

CO-ORDINATES

1	Latitude	:	From 25°14'03.59"N	To 24°14'10.44"N
2	Longitude	:	From 87°31'29.89"E	To 87°31'36.57"E

LAND DETAILS

Khata no.	Plot no.
08, 14 & 25	55 (P), 56 (P) & 127 (P)

1161

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 13.10.2017 to 12.10.2027.
2	CO	:	The CO, Mandro vide memo no. 427/Ra., dated 16.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid Certificate	:	DMO, Sahibganj vide memo no. 1062/M, dated 05.10.2024 certified that 01 other mining lease area (5.50 Acre) exists within 500 meters radius from proposed project site and total area is 11.50 Acre and also certified that the proposed project site is outside of Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2243, dated 09.11.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Divisioin vide memo no. 1760, dated 02.12.2016 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. 104, Page no. 285).
7	Gram Sabha	:	Gram Sabha conducted on 29.10.2015.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Sahibganj vide letter no. 1203/M, dated 13.12.2021.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/45, dated 27.03.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 1942, dated 22.10.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1985587 /2017/834, dated 31.12.2017.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-18912158 /2024/121, dated 26.04.2024.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1209/M, dated 11.11.2024.
14	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast semi-mechanized mining method	
2	Quarry Area	:	2.428 ha. or 6.00 Acres	Life of Mine – Upto the lease period i.e. 13.10.2017 to 12.10.2027.
3	Waste Generation	:	33496.25 Cum	
4	Stripping Ratio	:	1:0.4	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	160 AMSL to 188 AMSL	
8	Ground Level Elevation	:	160 AMSL	
9	Ultimate Working Depth	:	145 AMSL (15 mbgl)	
10	Water Table	:	130-125 AMSL (30-35 mbgl)	
11	Topography of Mine	:	The lease area represents a small hillock topography.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	120 litre/day	

Production Details

Year	Proposed Production of EC in Tons	Proposed Production of Stone in Cum	Proposed Production of Stone in Tons	Total Waste in Cum	Bench Section
1st	227941	78584.00	227893.60	5511.00	179-155
2nd	226206	78598.25	227934.93	8361.75	181-145
3rd	226132	78607.75	227962.48	10312.25	163-157
4th	229178	78607.75	227962.48	5177.25	157-151
5th	230234	78546.00	227783.40	4134.00	151-145
Total	**1139691**	**392943.75**	**1139536.88**	**33496.25**	

As per approved mine plan production: - 78607.75 cum/annum or 227962.48 TPA
As per EC letter production: - 79391 cum/annum or 230234 TPA

Land Use

Category	Present Land Use (in Ha)	At the End of Scheme Period (in Ha.)	At the End of mine (in Ha.)
Quarry	0.842	1.978 (0.116 ha area shall be backfilled)	1.978 (0.116 ha area shall be backfilled & 1.046 ha area shall be left as water reservoir)

Road	0.058	0.003	0.003
Safety Zone	0.447 (Plantation)	0.447 (Plantation)	0.447 (Plantation)
Total area in use	**1.347**	**2.428**	**2.428**
Balanced Unused Area	1.081	--	--
Total Lease area	**2.428**	**2.428**	**2.428**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.447 ha	1118 (Already done during previous year of mining)
2	Along Approach Road	:	120 m	240
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 1458 saplings were proposed to be planted. Out of which 1118 plant in Safety Zone area have been planted during previous year of mining.

(240 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 340 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	1,70,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**3,70,000**	**4,87,000**

Note: **340 plants * 500 Rs (for each plants including hedges and fences) = 1.7 Lakh*
A total of 1458 saplings were proposed to be planted. Out of which 1118 plant in Safety Zone area have been planted during previous year of mining.
(240 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 340 Plants)
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
300 300 = 90000/- or 1,50,000/- (including maintenance material)*

Environment Monitoring Programme

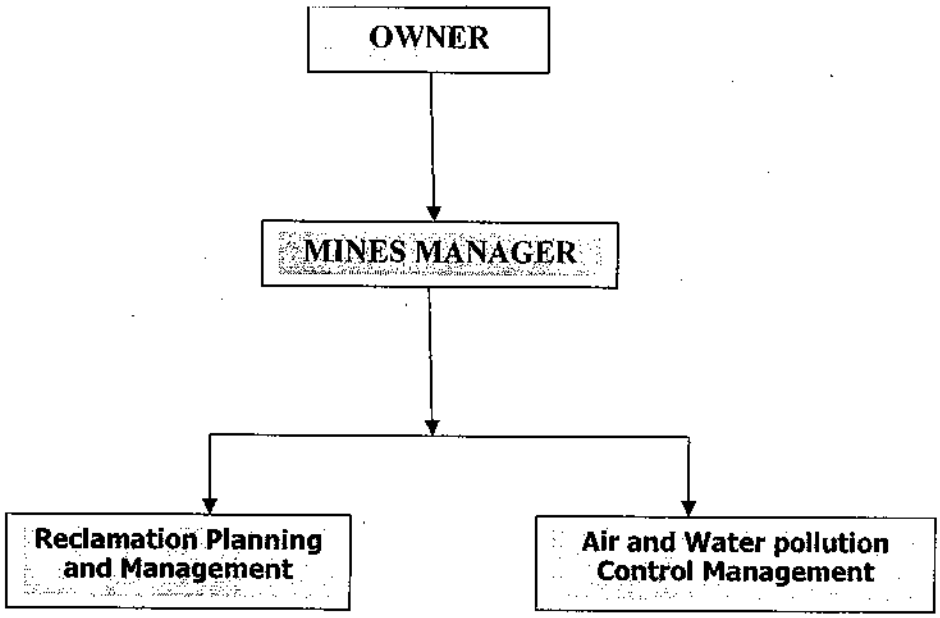
Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

It has been calculated that total 33496.25 cum insitu or 41870.31 cum loose or 35589.77 cum compact waste shall be generated during this scheme period. The generated waste from 1st and 2nd year shall be dumped at south western portion of the lease area and from 3rd year

generated waste & waste material of temporarily dump shall be used for backfilling of exhausted quarry in south eastern part which will cover 0.116 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, thereby 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, injuryor 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,	Remote	Minor	16

		Exposure to Dust			

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 Pakaria Stone Mine of M/s Sri Ram Stone Works (Prop. : Shri Tinkal Kumar Bhagat), Mauza : Pakaria, Thana : Mirzachouki, Distt. : Sahibganj, Jharkhand (2.428 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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 *"EkPed Ma KeNaam"* 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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31. **Panduya & Baijra Balu Ghat Mining Project (River Bed of Barakar) of M/s Sparkle World Pvt. Ltd., Village : Panduya & Baijra, Thana : Purbi Tundi, Distt. : Dhanbad, Jharkhand (3.925 Ha).**

(Proposal no.: SIA/JH/MIN/ 512779 /2024)

Name of the consultant : P & M Solution, Noida, U.P.

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

The project has been granted EC by DEIAA, Dhanbad vide letter no. EC/DEIAA/2018-19/538, dated 10.05.2018.

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, Dhanbad which has been taken up for consideration on 11.03.2025. 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 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. memo no. 285/M, dated 27.02.2025 by DMO, Dhanbad is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Ranchi vide ref. no. 721, dated 10.03.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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 60 % of the capacity mentioned in earlier EC i.e– 33276 Cum/Annum or 59896.8 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Panduya & Baijra Balu Ghat Mining Project (River Bed of Barakar) of area 3.925 Ha or 9.70 Acres.	
2	Lessee:	:	M/s Sparkle World Pvt. Ltd.	
3	Lessee Address	:	Village – Panduya&Baijra, District- Dhanbad, State – Jharkhand.	
4	Lease Area	:	3.925 ha.	Acres- 9.70 Acres
5	Type of Land	:	Govt. non forest (river) land	
6	Project Cost	:	Rs. 90 Lakhs	
7	EMP Budget	:	Capital: 9.75Lakhs	Recurring: 4.86Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	:	33276 Cum/Annum or 59896.8 TPA	
10	Mine Life	:	Up to the lease period 13.02.2020 to 20.08.2025.	
11	Man power	:	28	
12	Water Requirement	:	10.68 ~ 11.00 KLD (Drinking: 0.28 KLD, Dust Suppression: 3.90 KLD, Plantation: 6.50 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	Project lies on Barakar River.	
17	Nearest Habitation	:	Bejravillage, Approx. 0.83 km towards SW direction.	
18	Nearest Railway Station	:	Jamtara Railway Station, approx. 16.10 Km in ENE direction.	
19	Nearest Air Port	:	Birsa Munda Airport Ranchi approx. 151.30 km towards WSW direction.	
20	Nearest Forest	:	Open missed jungle, Approx. 4.5 Km in SW direction from mining lease	
21	Road & Highways	:	NH-419, Approx. 0.65Km in East direction from mining lease.	

CO-ORDINATES

1	Latitude		From 23° 55' 35.88"N	To 23° 55' 48.25" N
2	Longitude		From 86° 38'58.54" E	To 86° 39' 11.74"E

LAND DETAILS

Khata no.	Plot no.
19 & 09	2365 (P), 2366 & 1 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Supplementary Lease deed : 13.02.2020 to 20.08.2025.
2	CO	:	The CO, East Tundi vide letter no. 123, dated 04.02.2025 has mentioned the plot no. of the project is not recorded as "Jungle - Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 1783/M, dated 03.12.2024 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. 145, dated 25.01.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Dhanbad Forest Divisioin vide letter no. 1814, dated 03.10.2017 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 Dhanbad District.
7	Gram Sabha	:	Gram Sabha conducted on 12.08.2017.
8	Scheme / Mine Plan Approval	:	Mining plan approved by DDM, Dhanbad Circle, Dhanbad vide memo no. 29, dated 19.01.2016.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Dhanbad vide letter no. EC/DEIAA/2018-19/538, dated 10.05.2018.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Ranchi vide ref. no. 721, dated 10.03.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-7946036 /2020/222, dated 01.06.2020.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DHN/CTO-11179368 /2021/89, dated 29.09.2021.
13	Production	:	Production report issued by DMO, Dhanbad vide memo no.

	Report		285/M, dated 27.02.2025.
14	Qualified Person	:	Shri Tapan Kumar Chakravarty was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Method	
2	Quarry Area	:	3.925 Ha or 9.70 Acres	Life of Mine – Up to the lease period 13.02.2020 to 20.08.2025. .
3	Waste Generation	:	NA, as it is sand mining project.	
4	Stripping Ratio	:	0:0	
5	Working Days	:	260 Days	
6	Benches: size & No	:	Bench height – 1.0m &Bench width–6.0 m.	
7	Elevation of Mine	:	156.80 mRL to 157.20mRL	
8	Ground Level Elevation	:	156.80 mRL	
9	Ultimate Working Depth	:	1.0 m	
10	Water Table	:	NA	
11	Topography of Mine	:	Area lying in river plain.	
12	Explosive Requirement	:	NA	
13	Diesel/Fuel requirement	:	NA	

Production Details

The mining will be done by manually means, etc. the targeted annual production of Mineral is about **33276 Cum/Annum or 59896.8 TPA.**

Land Use

Type of Land	Area in (ha)
Forest Land	Nil
G.M land (River)	3.925
Residential area	Nil
Company land	Nil

Private Land	Nil
Total	**3.925**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Plantation along both sides of approach road		650m	1300
2	No. of Plants distributed with consultation local authorities/ village Panchayat		--	40 (Already done during previous year of mining)

Note: A total of 1340 saplings were proposed to be planted. Out of which 40 plants distributed in Schools, Anganwadi or village Panchayat during previous year of mining.
(1300 plant along approach road will be done in the first year of operation. (Total 1300 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.

Environment Management Plan

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	--	 14,000 8,000 7,000 7,000
3	Plantation	6,50,000	1,00,000
4	Construction and maintenance of haul road	3,25,000	1,50,000

Total	**9,75,000**	**4,86,000**

Note: *1300 plants *500 Rs (for each plants including hedges and fences) = Rs. 6,50,000/-

Note: A total of 1340 saplings were proposed to be planted. Out of which 40 plants distributed in Schools, Anganwadi or village Panchayat during previous year of mining.

(1300 plant along approach road will be done in the first year of operation. (Total 1300 Plants)

Salary of Labor for haul road maintenance 1 labor*300 = 300 per day

300* 200 = 60,000/- ~ 1,50,000/- (including Maintenance)

* 5 lakh per kilometer (500000 * 0.65 km haul road = 3,25,000/-)

Environment Monitoring Programme

S. 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

No solid waste is generated during the course of mining.

Water Quality Management

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. Sewage from rest shelter would be treated in Septic Tank soak pit.

C. There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

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

II. **Loading of Product on tippers –** Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. **Movement of tippers on Road –** Movement of tippers 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 Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand 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

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.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

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

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- 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 tractor. Large earth moving equipment's are not 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/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach 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 Panduya & Baijra Balu Ghat Mining Project (River Bed of Barakar) of M/s Sparkle World Pvt. Ltd., Village : Panduya & Baijra, Thana : Purbi Tundi, Distt. : Dhanbad, Jharkhand (3.925 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II 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. 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. The Environmental Clearance granted for lease period.
V. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

VI. Suitable plant species of not less than 2 M height to be planted in area 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.

VII. Dedicated water tanker to be provided 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.

VIII. Pre-employment Occupational health checkup 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.

IX. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

X. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

XI. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XII. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XIII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIV. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XVI. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVII. Extraction of sand beyond annual production capacity is not permitted.

XVIII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XIX. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high

winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XXI. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXII. No labour camp shall be allowed in riverbed.

XXIII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIV. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXVI. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVII. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVIII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXIX. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXXI. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXII. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXIII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIV. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of

the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report

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32. Karondajor Stone Mine of Shri Bihari Ohdar, Village : Karondajor, Thana : Bharno, Distt. : Gumla, Jharkhand (4.65 Ha).

(Proposal no.: SIA/JH/MIN/ 507350 /2024)

Name of the consultant : P & M Solution, Noida, U.P.

Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Gumla).

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA/2016-17/0018/2017/12/EC, dated 25.03.2017.

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, Gumla which has been taken up for consideration on 11.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per memo no. 65/M, dated 15.01.2025 by DMO, Gumla is within the permissible limit of EC.

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

TOR Application for: Proposed Capacity- 100039.27 cum/annum or 270106.04 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Karondajor Stone Mine	
2	Lessee:	:	Sri Bipin Bihari Ohdar	
3	Lease Address	:	Village – Karondajor, Thana – Bharno, District – Gumla, State- Jharkhand	
4	Lease Area	:	4.65 ha	Acres- 11.50 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 1.40 cr.	
7	EMP Budget	:	Capital: Rs. 9.50 Lakhs	Recurring: 5.70 Lakhs/year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	779325.92 tons	2104180 cum
10	Mine Life	:	Upto the lease period i.e. 30.11.2017 to 29.11.2027.	
11	Man power	:	39	
12	Water Requirement	:	9.84 ~ 10.00 KLD (Drinking: 0.39 KLD, Dust Suppression: 6.85 KLD, Plantation: 2.6 KLD) 9.85	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	--	
17	Nearest Habitation	:	Karondajor, Approx. 0.45 km in WSW direction	
18	Nearest Railway Station	:	Bakaspur Railway station, Approx. 19.42 km towards SE direction.	
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi, Approx. 57.90 km towards ENE direction.	
20	Nearest Forest	:	Protected Forest, Approx. 4.1 km towards East direction of mine site.	
21	Road & Highways	:	NH-43, Approx. 8.03 km. in NNW direction.	

CO-ORDINATES

1	Latitude	:	From 23°05'51.68"N	To 23°06'02.19" N
2	Longitude	:	From 84°48'43.25" E	To 84°48'50.79" E

LAND DETAILS

Khata no.	Plot no.
167	1827 (P)

1187

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 30.11.2017 to 29.11.2027.
2	CO	:	The CO, Bharno (Gumla) vide letter no. 482 (ii), dated 27.11.2024 has mentioned the plot no. of the project is not recorded as "Jungle - Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 844/M, dated 19.10.2024 certified that 04 other mining lease area (1.00 Acre, 9.00 Acre, 5.00 Acre & 11.50 Acre) exists within 500 meters radius from proposed project site and total area is 38.00 Acre (15.37 Ha).
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 1013, dated 27.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Divisioin vide letter no. 2916, dated 16.12.2016 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 Gumla District (Sl. No. 30, Page no. 43).
7	Gram Sabha	:	Gram Sabha conducted on 11.11.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Gumla vide letter no. 195/M, dated 14.02.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA/2016-17/0018/2017/12/EC, dated 25.03.2017.
10	Compliance report of EC	:	Self certified compliance report.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2094299 /2018/226, dated 28.02.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-12173037 /2022/94, dated 26.04.2022.
13	Production Report	:	Production report issued by DMO, Gumla vide memo no. 65/M, dated 15.01.2025.
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	:	Opencast mechanized mining method	
2	Quarry Area	:	4.65 ha or 11.50 Acres	Life of Mine – Upto the lease period i.e. 30.11.2017 to 29.11.2027.
3	Waste Generation	:	8035 Cum	
4	Stripping Ratio	:	1:0.05	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	642 AMSL to 674 AMSL	
8	Ground Level Elevation	:	642 AMSL	
9	Ultimate Working Depth	:	632 AMSL (10 mbgl)	
10	Water Table	:	618-616 AMSL (24-26 mbgl)	
11	Topography of Mine	:	The lease area is undulating land with rock mass.	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	120 litre/day	

Production Details

Year	Production of Stone in Tons As per EC Letter	Production of Stone in Tons	Production of Stone in Cum	Gritty Soil Removal in cum	Bench section
1st	269893.15	269892	99960	4635	668-656
2nd	270071.42	270070	100026	--	662-650
3rd	269991.26	269991	99996	3400	662-644
4th	270106.04	270103	100038	--	655-638
5th	269964.97	269962	99986	--	644-632
Total	**1350026.84**	**13,50,018**	**5,00,006**	**8035**	

As per approved mine plan production: - 100038 cum/annum or 270103 TPA
As per EC letter production: - 100039.27 cum/annum or 270106.04 TPA

Land Use

Pattern of Utilization	Present Land Use (in Ha)	At the End of this Plan period (in Ha)	At the End of Mine (in Ha)	Conceptual Period (in Ha)	
				Water Body	Plantation
Quarry	1.25	2.830	4.0 (including Backfill 0.23Ha.)	4.0	-

Safety Barrier	0.65 (Plantation)	0.65 (Plantation)	0.65 (Plantation)	-	0.65 (Plantation)
Dump	-	0.160	-	-	-
Parapet Wall	-	0.005	-	-	-
Garland Drain	-	0.006	-	-	-
Road	0.06	0.050	-	-	-
Total area in use	**1.96**	**3.701**	**4.65**	**4.0**	**0.65**
Balanced Area Unused	2.69	0.949	-	-	-
Total Lease area	**4.65**	**4.65**	**4.65**	**4.65**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.65 ha	1625 (Already done during previous year of mining)
2	Along Approach Road	:	600 m	1200
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 2925 saplings were proposed to be planted. Out of which 1625 plant in Safety Zone area have been planted during previous year of mining.

(1200 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1300 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	--	50,000 40,000 20,000 10,000
3	Plantation	6,50,000	1,00,000
4	Construction and maintenance of haul road	3,00,000	1,50,000
TOTAL		**9,50,000**	**5,70,000**

Note: *1300 plants * 500 Rs (for each plants including hedges and fences) = 6.50 Lakh
A total of 2925 saplings were proposed to be planted. Out of which 1625 plant in Safety Zone area have been planted during previous year of mining.
(1200 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1300 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 * 0.60 km haul road = 3,00,000/-)

Environment Monitoring Programme

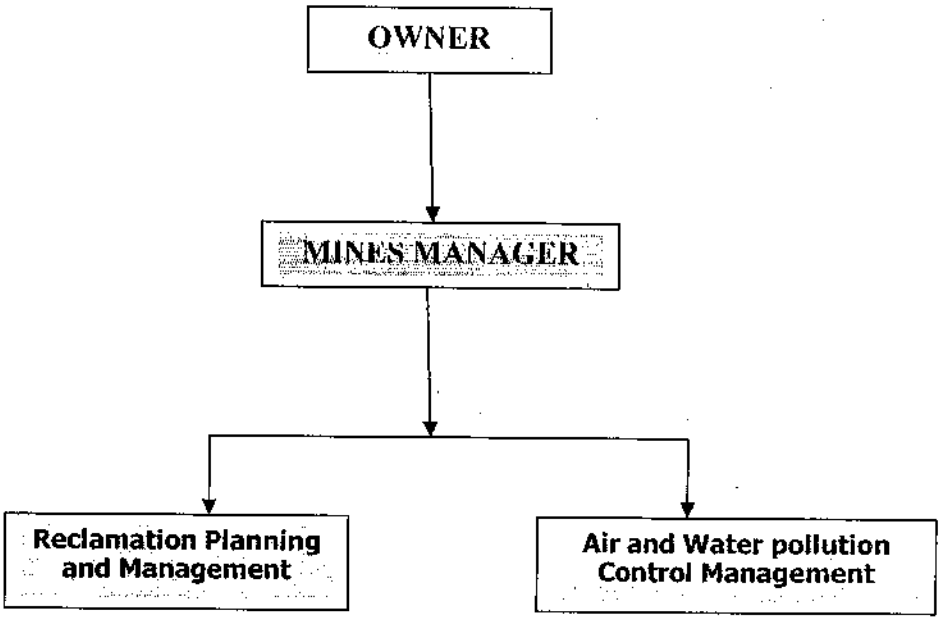
Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 9122 cum gritty soil will be generated during plan period. During quarry development gritty soil in 1st year & 3rd year will be temporarily dumped at the north-eastern part of the area with suitable precautions. In conceptual period total removed soil will be backfilled within exhausted quarry.

1191

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, thereby 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank	L5 (Very	L4 (Remote)	L3	L2	L1

(Likelihood x Consequence)	Unlikely)		(Occasional)	(Probable)	(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 08, 09, 10, 11 & 12.03.2025, 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. 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. Certified Compliance Report of the conditions of the previous EC is to be submitted with final EIA / EMP.
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.

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33. Karondajor Stone Mine of Smt. Saroj Minz, Village : Karondajor, Thana : Bharno, Distt. : Gumla, Jharkhand (4.65 Ha).

(Proposal no.: SIA/JH/MIN/ 507446 /2024)

Name of the consultant : P & M Solution, Noida, U.P.

Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Gumla).

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA/2016-17/0017/2017/16/EC, dated 25.03.2017.

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, Gumla which has been taken up for consideration on 11.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per memo no. 64, dated 15.01.2025 by DMO, Gumla is within the permissible limit of EC.

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

TOR Application for: Proposed Capacity- 78356.00 cum/annum or 211561.20 TPA

1200

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Karondajor Stone Mine	
2	Lessee:	:	Smt. Saroj Minz	
3	Lease Address	:	Village – Karondajor, Thana – Bharno, District – Gumla, State- Jharkhand	
4	Lease Area	:	4.65 ha	Acres- 11.50 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 1.40 cr.	
7	EMP Budget	:	Capital: Rs. 7.25 Lakhs	Recurring: 5.70 Lakhs/year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	1643574 tons	608731.11 cum
10	Mine Life	:	Upto the lease period i.e. 30.11.2017 to 29.11.2027.	
11	Man power	:	39	
12	Water Requirement	:	8.74 ~ 9.0 KLD (Drinking: 0.39 KLD, Dust Suppression: 6.35 KLD, Plantation: 2.0 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	:	--	
17	Nearest Habitation	:	Karondajor, Approx. 0.45 km in WSW direction	
18	Nearest Railway Station	:	Bakaspur Railway station, Approx. 19.42 km towards SE direction.	
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi, Approx. 57.90 km towards ENE direction.	
20	Nearest Forest	:	Protected Forest, Approx. 4.1 km towards East direction of mine site.	
21	Road & Highways	:	NH-43, Approx. 8.03 km. in NNW direction.	

CO-ORDINATES

1	Latitude	:	From 23°05'55.28"N	To 23°06'03.52" N
2	Longitude	:	From 84°48'33.54" E	To 84°48'45.09" E

LAND DETAILS

Khata no.	Plot no.
167	1827 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 30.11.2017 to 29.11.2027.
2	CO	:	The CO, Bharno (Gumla) vide letter no. 483 (ii), dated 27.11.2024 has mentioned the plot no. of the project is not recorded as "Jungle - Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 841/M, dated 19.10.2024 certified that 04 other mining lease area (1.00 Acre, 9.00 Acre, 5.00 Acre & 11.50 Acre) exists within 500 meters radius from proposed project site and total area is 38.00 Acre (15.37 Ha).
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 1014, dated 27.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Divisioin vide letter no. 2915, dated 16.12.2016 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 Gumla District (Sl. No. 29, Page no. 43).
7	Gram Sabha	:	Gram Sabha conducted on 11.11.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Gumla vide letter no. 194/M, dated 14.02.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA/2016-17/0017/2017/16/EC, dated 25.03.2017.
10	Compliance report of EC	:	Self certified compliance report.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2094234 /2018/225, dated 28.02.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-12105141 /2022/95, dated 26.04.2022.
13	Production Report	:	Production report issued by DMO, Gumla vide memo no. 64, dated 15.01.2025.
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	:	Opencast mechanized mining method	
2	Quarry Area	:	4.65 ha or 11.50 Acres	Life of Mine – Upto the lease period i.e. 30.11.2017 to 29.11.2027.
3	Waste Generation	:	9122 Cum	
4	Stripping Ratio	:	1:0.08	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	639 AMSL to 664 AMSL	
8	Ground Level Elevation	:	639 AMSL	
9	Ultimate Working Depth	:	628 AMSL (11 mbgl)	
10	Water Table	:	614-612 AMSL (25-27 mbgl)	
11	Topography of Mine	:	The lease area is undulating land with rock mass.	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	120 litre/day	

Production Details

Year	Production of Stone in Tons As per EC Letter	Production of Stone in Tons	Production of Stone in Cum	Gritty Soil Removal in cum	Bench section
1st	209201.40	209200	77481	4092	664-646
2nd	210124.80	210124	77824	3873	652-646
3rd	211479.12	211478	78325	773	658-640
4th	211561.20	211559	78355	384	646-634
5th	211068.72	211068	78173	-	640-634
Total	**1053435.24**	**1053429.00**	**390158.00**	**9122**	

As per approved mine plan production: - 78355 cum/annum or 211559 TPA
As per EC letter production: - 78356.00 cum/annum or 211561.20 TPA

Land Use

Pattern of Utilization	Present Land Use (in Ha)	At the End of this Plan period (in Ha)	At the End of Mine (in Ha)	Conceptual Period (in Ha)	
				Water Body	Plantation
Quarry	1.123	3.640	3.92 (including Backfill 0.23 Ha.)	3.92	-

Safety Barrier	0.73 (Plantation)	0.73 (Plantation)	0.73 (Plantation)	-	0.73 (Plantation)
Dump	-	0.160	-	-	-
Parapet Wall	-	0.005	-	-	-
Garland Drain	-	0.007	-	-	-
Road	0.007	0.001	-	-	-
Total area in use	**1.86**	**4.543**	**4.65**	**3.92**	**0.73**
Balanced Area Unused	2.79	0.107	-	-	-
Total Lease area	**4.65**	**4.65**	**4.65**	**4.65**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.73 ha	1825 (Already done during previous year of mining)
2	Along Approach Road	:	450 m	900
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 2825 saplings were proposed to be planted. Out of which 1825 plant in Safety Zone area have been planted during previous year of mining.
(900 plant along approach road & 100 plants with consultation from local authorities/village Panchayat) will be done in the first year of operation. (Total 1000 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	--	50,000 40,000 20,000 10,000
3	Plantation	5,00,000	1,00,000
4	Construction and maintenance of haul road	2,25,000	1,50,000
TOTAL		**7,25,000**	**5,70,000**

Note: *1000 plants * 500 Rs (for each plants including hedges and fences) = 5.0 Lakh
A total of 2825 saplings were proposed to be planted. Out of which 1825 plant in Safety Zone area have been planted during previous year of mining.
(900 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1000 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 * 0.45 km haul road = 2,25,000/-)

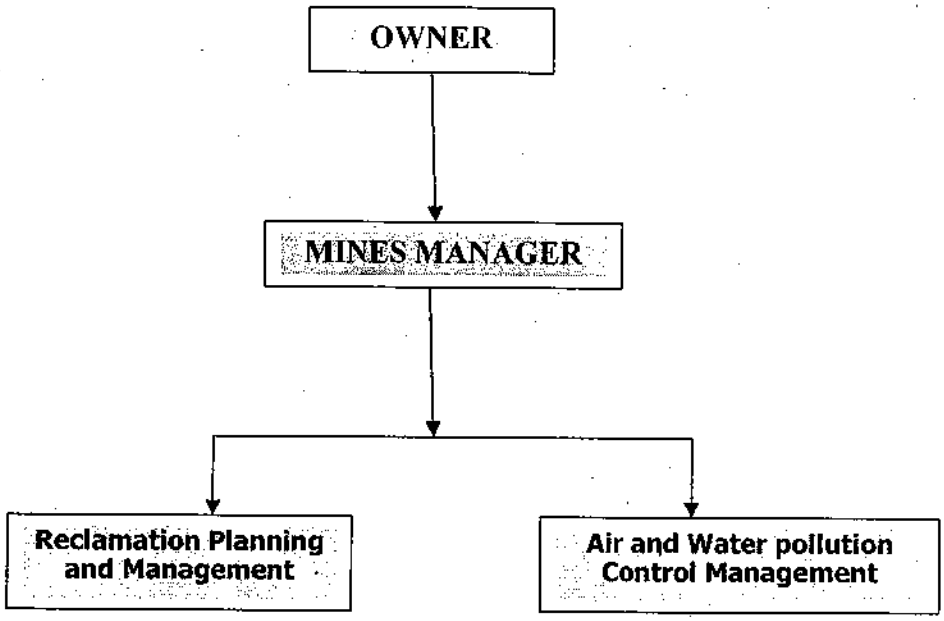
Environment Monitoring Programme

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 9122 cum gritty soil will be generated during plan period. During quarry development gritty soil in 1st year & 3rd year will be temporarily dumped at the north-eastern part of the area with suitable precautions. In conceptual period total removed soil will be backfilled within 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, thereby 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)

Consequence)					
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.

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- 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 08, 09, 10, 11 & 12.03.2025, 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. 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. Certified Compliance Report of the conditions of the previous EC is to be submitted with final EIA / EMP.
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.

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34. Garga Stone Mine of Shri Asit Kumar Mandal & Md. Azad Ansari, Village : Garga, Thana : Nirsa, Distt. : Dhanbad, Jharkhand (2.83 Ha).

(Proposal no.: SIA/JH/MIN/ 518844 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

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

The project has been granted EC by DEIAA, Dhanbad vide letter no. EC/DEIAA/2016-17/14, dated 17.01.2017.

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, Dhanbad which has been taken up for consideration on 11.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ 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. memo no. 1231/M, dated 31.07.2023 and memo no. 1803/M, dated 09.12.2024 by DMO, Dhanbad is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhanbad vide memo no. 73, dated 20.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided 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.

TOR Application for: Proposed Capacity- 36,000 cum/annum or 1,08,000 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Garga Stone Mine	
2	Lessee:	:	Asit Kumar Mandal & Md. Azad Ansari	
3	Lease Address	:	Village – Garga, Thana – Nirsa, District – Dhanbad, State- Jharkhand	
4	Lease Area	:	2.83 ha	Acres- 7.0 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 1.40cr.	
7	EMP Budget	:	Capital: Rs. 14.40Lakhs	Recurring: 8.70 Lakhs/year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	7,08,457.50 tons	236152.5cum
10	Mine Life	:	Upto the lease period i.e. 05.11.2017 to 04.11.2027.	
11	Man power	:	15	
12	Water Requirement	:	12.25 ~ 12.0KLD (Drinking: 0.15 KLD, Dust Suppression: 7.54 KLD, Plantation: 4.56 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	:	--	
17	Nearest Habitation	:	Gorga, Approx. 0.51km in ESE direction	
18	Nearest Railway Station	:	Jamtara Railway station, Approx. 18.0 km towards ENE direction. .	
19	Nearest Air Port	:	Reserve Forest, Approx. 4.50 km towards South direction of mine site.	
20	Nearest Forest	:	Reserve Forest, Approx. 3.0 km towards West direction of mine	

			site.
21	Road & Highways	:	NH-419, Approx. 2.0 km. in West direction.

CO-ORDINATES

Latitude	:	From 23°53'38.24"N	To 23°53'50.86" N
Longitude	:	From 86°38'00.71"E	To 86°38'08.14" E

LAND DETAILS

Khata no.	Plot no.
72 (Old) & 159 (New)	576 /P (Old) and 600 (P) & 642 (P) (New)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 05.11.2017 to 04.11.2027.
2	CO	:	The CO, Nirsa vide letter no. 463, dated 13.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Dhanbad vide memo no. 1804/M, dated 09.12.2024 certified that 02 other mining lease area (7.85 Acre & 3.90 Acre) exists within 500 meters radius from proposed project site and total area is 18.75 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2051, dated 06.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Dhanbad Forest Divisioin vide letter no. 2442, dated 17.08.2023 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 Dhanbad District (Sl. No. 16, Page no. 117).
7	Gram Sabha	:	Gram Sabha conducted on 28.04.2016.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Dhanbad vide memo no. 1777/M, dated 30.11.2024.
9	Previous Environmental	:	Previous EC granted by DEIAA, Dhanbad vide letter no. EC/DEIAA/2016-17/14, dated 17.01.2017.

	Clearance (EC)		
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhanbad vide memo no. 73, dated 20.01.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2012992 /2018/179, dated 14.02.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DHN/CTO-8861827 /2020/83, dated 12.11.2020.
13	Production Report	:	Production report issued by DMO, Dhanbad vide memo no. 1231/M, dated 31.07.2023 and memo no. 1803/M, dated 09.12.2024.
14	Qualified Person	:	Dr. Amarjeet Kumar Singh vide e-mail dated 10.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized mining method	
2	Quarry Area	:	2.83 ha or 7.0 Acres	Life of Mine – Upto the lease period i.e. 05.11.2017 to 04.11.2027.
3	Waste Generation	:	No waste generation in mine	
4	Stripping Ratio	:	01:0.0	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	190AMSL to 192AMSL	
8	Ground Level Elevation	:	190 AMSL	
9	Ultimate Working Depth	:	162AMSL 28mbgl)	
10	Water Table	:	155 AMSL (35mbgl)	
11	Topography of Mine	:	The lease area an undulating topography.	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	120 litre/day	

Production Details

Year	Production in cum	Tonnage factor (t/m3)	Production in Tonne	Bench AMSL
1st	36,000	3.00	1,08,000	188-180
2nd	36,000	3.00	1,08,000	186-174
3rd	36,000	3.00	1,08,000	174-162
4th	36,000	3.00	1,08,000	186-162
Total	1,44,000	-	4,32,000	

As per approved mine plan production: - 36,000 cum/annum or 1,08,000 TPA
As per EC letter production: - 36,000 cum/annum or 1,08,000 TPA

Land Use

Type of land use	Existing (ha)	During Plan Period (ha)	During Conceptual Period
Quarry	1.67	1.91	2.03
Infrastructure	Nil	0.03	Nil
Mine road	0.03	0.01	Nil
Garland drain	Nil	0.07	Nil
Safety Zone (Plantation)	0.80 (Plantation)	0.80 (Plantation)	0.80 (Plantation)
Settling Tank	Nil	0.01	Nil
Unused Area	0.33	-	-
Total	**2.83**	**2.83**	**2.83**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.80 ha	2000 (Already done during previous year of mining)
2	Along Approach Road	:	590 m	1180
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 3280 saplings were proposed to be planted. Out of which 100 plant in Safety Zone area have been planted during previous year of mining.
(1000 plant Safety zone & 1180 plant along approach road & 100 plants with consultation from local authorities/village Panchayat) will be done in the first year of operation. (Total 2280 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.

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2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	11,40,000	2,00,000
4	Construction and maintenance of haul road	3,00,000	1,50,000
TOTAL		**14,40,000**	**8,70,000**

Note *2280 plants * 500 Rs (for each plants including hedges and fences) = 11.40 Lakh
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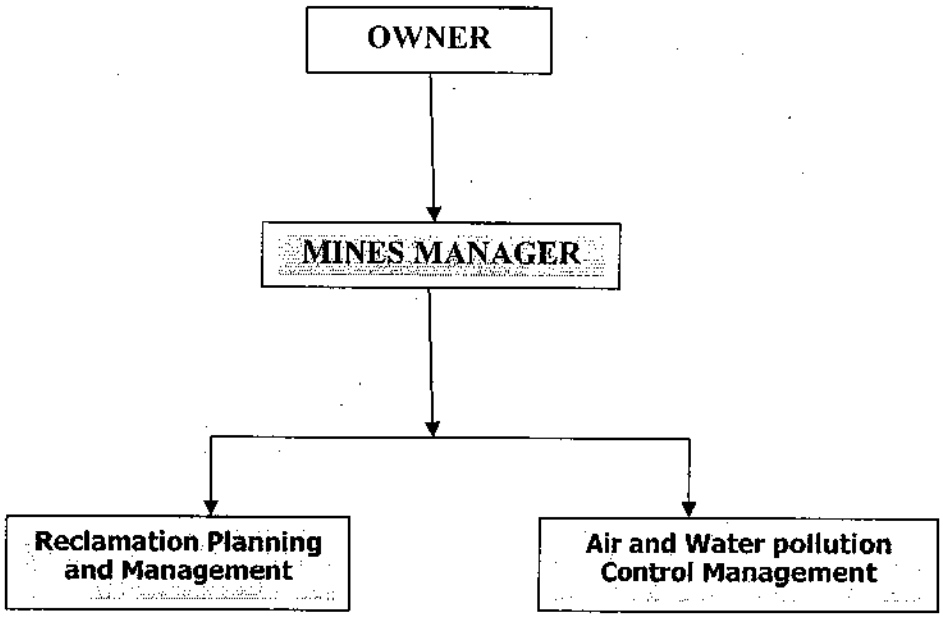
5	Noise	4 Stations	6 Monthly

Solid Waste Management
No waste generation in mine.

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, thereby 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1	5	4	3	2	1

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(Catastrophic)					
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 08, 09, 10, 11 & 12.03.2025, 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. 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.

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35. **Gorga Stone Mine of Md. Ishraq Zia, Village : Gorga, Thana : Nirsa, Distt. : Dhanbad, Jharkhand (3.24 Ha).**

(Proposal no.: SIA/JH/MIN/ 526569 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

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

The project has been granted EC by DEIAA, Dhanbad vide letter no. EC/DEIAA/2016-17/09, dated 17.01.2017.

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, Dhanbad which has been taken up for consideration on 11.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per memo no. memo no. 09/M, dated 08.01.2025 by DMO, Dhanbad is within the permissible limit of EC.

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

TOR Application for: Proposed Capacity- 1,10,230.37 cum/annum or 2,97,622 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Gorga Stone Mine	
2	Lessee:	:	Md Ishraq Zia	
3	Lease Address	:	Village – Gorga, Thana – Nirsa, District – Dhanbad, State- Jharkhand	
4	Lease Area	:	3.24 ha	Acres- 8.02 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 1.40cr.	
7	EMP Budget	:	Capital: Rs. 16.65Lakhs	Recurring: 8.70 Lakhs/year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	709670 tons	262840.74 cum
10	Mine Life	:	Upto the lease period i.e. 28.03.2016 to 27.03.2026.	

11	Man power	:	16
12	Water Requirement	:	14.86~ 15.00 KLD (Drinking: 0.16 KLD, Dust Suppression: 9.24 KLD, Plantation: 5.46 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 Nadi, Approx. 3.10 km towards North direction of mine site.
17	Nearest Habitation	:	Bejra, Approx. 0.23km in NNW direction
18	Nearest Railway Station	:	Jamtara Railway station, Approx. 18.0 km towards ENE direction. .
19	Nearest Air Port	:	Deoghar Airport, Approx. 61.40 km towards North direction.
20	Nearest Forest	:	Reserve Forest, Approx. 2.90 km towards West direction of mine site. Reserve Forest, Approx. 2.90 km towards West direction of mine site.
21	Road & Highways	:	NH-419, Approx. 0.93 km. in North direction.

CO-ORDINATES

Latitude	:	From 23°54'24.87" N	To 23°54'32.65" N
Longitude	:	From 86°38'17.98" E	To 86°38'33.49" E

LAND DETAILS

Khata no.	Plot no.
72	11, 19 & 1048 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 28.03.2016 to 27.03.2026.
2	CO	:	The CO, Nirsa vide letter no. 990, dated 30.09.2015 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Dhanbad vide memo no. 08/M, dated 08.01.2025 certified that 01 other mining lease area (9.20 Acre) exists within 500 meters radius from proposed project site and total area is 17.22 Acre.

4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 53, dated 09.01.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Dhanbad Forest Divisioin vide letter no. 2418, dated 12.08.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dhanbad District (Sl. No. 02, Page no. 41).
7	Gram Sabha	:	Gram Sabha conducted on 02.09.2015.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Dhanbad vide memo no. 63/M, dated 21.01.2025.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Dhanbad vide letter no. EC/DEIAA/2016-17/09, dated 17.01.2017.
10	Compliance report of EC	:	Self certified compliance report.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1373770 /2018/486, dated 10.05.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DHN/CTO-12953160 /2022/18, dated 01.05.2022.
13	Production Report	:	Production report issued by DMO, Dhanbad vide memo no. 09/M, dated 08.01.2025.
14	Qualified Person	:	Dr. Amarjeet Kumar Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized mining method	
2	Quarry Area	:	3.24 ha or 8.02 Acres	Life of Mine – Upto the lease period i.e. 28.03.2016 to 27.03.2026.
3	Waste Generation	:	5508.77 Cum	
4	Stripping Ratio	:	01:0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	189AMSL to 198AMSL	

8	Ground Level Elevation	:	189 AMSL
9	Ultimate Working Depth	:	164AMSL (25mbgl)
10	Water Table	:	159AMSL (30mbgl)
11	Topography of Mine	:	The lease area is a very gently sloping land with mass of Granite-gneiss.
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	140 litre/day

Production Details

As per approved mine plan production: - 2,97,622 TPA
As per EC letter production: - 2,97,622 TPA

Land Use

Type of land use	Existing (ha)	During scheme Period (ha)	During Conceptual Period
Quarry	1.40	1.52	2.02
Infrastructure	Nil	0.01	Nil
Mine Road	0.01	0.01	Nil
Garland drain	Nil	0.15	Nil
Safety Zone(Plantation)	1.22	1.22	1.22
Settling Tank	Nil	0.01	Nil
Total	2.63	2.92	3.24
Unused Area	0.61	0.32	0
Total Lease area	3.24	3.24	3.24

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	1.22 ha	3050 (Already done during previous year of mining)
2	Along Approach Road	:	540 m	1080
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 4230 saplings were proposed to be planted. Out of which 1500 plant in Safety Zone area have been planted during previous year of mining.
(1550 plant Safety zone & 1080 plant along approach road & 100 plants with consultation from local authorities/village Panchayat) will be done in the first year of operation. (Total 2730 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	--	4,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	13,65,000	2,00,000
4	Construction and maintenance of haul road	3,00,000	1,50,000
TOTAL		**16,65,000**	**8,70,000**

Note *2730 plants * 500 Rs (for each plants including hedges and fences) = 13.65 Lakh
A total of 4230 saplings were proposed to be planted. Out of which 1500 plant in Safety Zone area have been planted during previous year of mining.
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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 * 0.54 km haul road = 2,70,000/-or 3,00,000/-)

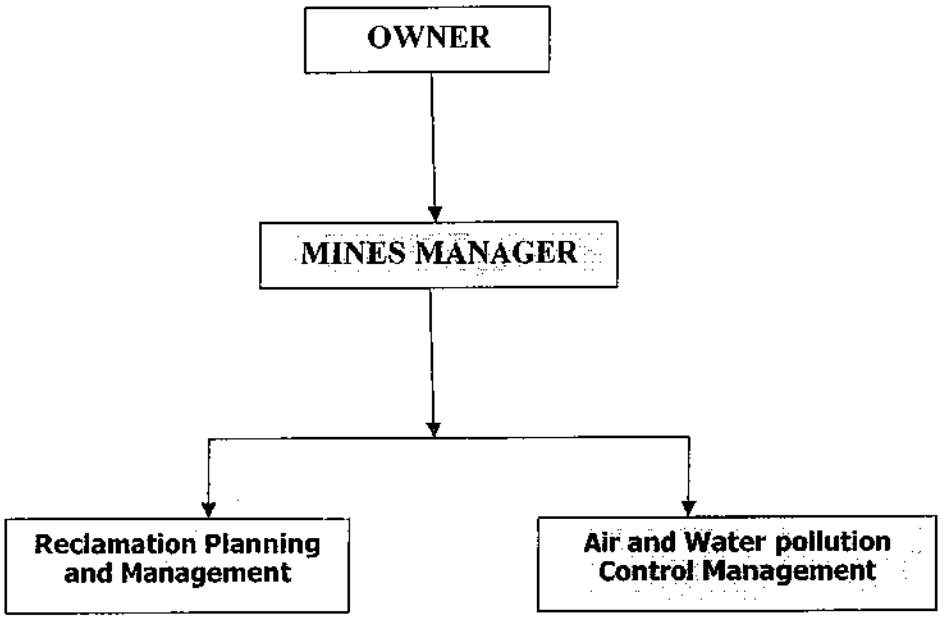
Environment Monitoring Programme

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

About 5508.77 cum of waste will be generated which will be used for maintenance of approach road.

Organization Structure



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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 08, 09, 10, 11 & 12.03.2025, 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. 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. Certified Compliance Report of the conditions of the previous EC is to be submitted with final EIA / EMP.
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.

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The meeting concluded with thanks to all present.

12.03.2025

Ashok Kumar Dubey, IFS (Retd.)
Member

12.03.2025

Dr. Ajay Govind Bhatt
Member

12/03/2025

Niranjan Lal Agarwalla
Member

Dr. Raju Kumar
Member

12/3/25

Srikant Verma, IFS
Member Secretary

12/03/2025

Ashok Kumar Singh, IFS (Retd.)
Chairman

Annexure – I

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-peaking 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, 20L.6.,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

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.

Annexure – II

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. GodavermanThirumulpadvs union of India and ors. theHon'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). 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 PPshall 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.

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. 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. And 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.

Annexure - III

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.

xlii. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

xliii. 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 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.

ii. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.

iii. The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule-I species in the study area)

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 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.

vi. The project proponent shall obtain the necessary permission from the Central Ground Water Authority.

vii. Solid waste/hazardous waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules, 2016 / Hazardous & Other Waste Management Rules, 2016 as amended from time to time.

II. Air quality monitoring and preservation

i. Continuous ambient air quality monitoring stations as prescribed in the statue be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM10, PM2.5, S02 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or

in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

ii. The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.

iii. Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water / mist sprinkling / rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM10/PM2.5) such as haul road, loading/ unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.

iv. The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.

v. Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.

vi. Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.

vii. Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.

III. Water quality monitoring and preservation

i. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.

ii. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-1A.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.

iii. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

iv. Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change / Regional Office.

v. Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.

vi. Catch and or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.

vii. Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).

viii. Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP / STP needs to be provided.

ix. The water pumped out from the mine, after siltation, shall be utilized for industrial purpose *viz.* watering the mine area, roads, green belt development *etc.* The drains shall be regularly desilted particularly after monsoon and maintained properly.

x. The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water

courses shall be as per the approved Mining PlaniEIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.

xi. The project proponent shall take all precautionary measures to ensure reverian/ riparian ecosystem in and around the coal mine upto a distance of 5 km. A revarian /riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

IV. Noise and Vibration monitoring and prevention

i. Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs / muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.

ii. Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.

iii. The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

V. Mining Plan

i. Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.

ii. Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).

iii. No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980

iv. Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

VI. Land reclamation

i. Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEF&CC) from time to time shall be submitted to MOEFCC/Regional Office (RO).

ii. The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural /forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.

iii. The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the "during mining" / "post mining" land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.

iv. Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.

v. Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.

vi. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

VII. Green Belt

i. The project proponent shall take all precautionary measures during rmnmg operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.

ii. Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt

comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach! coal transportation roads.

VIII. Public hearing and Human health issues

i. Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six- monthly basis.

ii. The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any. as amended time to time.

iii. Personnel (including outsoured employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.

iv. Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.

v. The project proponent shall follow the mitigation measures provided in this Ministry'S OM No.Z-11013/5712014-IA.I1 (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'.

IX. Corporate Environment Responsibility

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 approve 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.

v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

X. **Miscellaneous**

i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

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 monitor the criteria pollutants level namely; PM_{10}, SO_2, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

v. 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.

vi. 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.

vii. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.

viii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

ix. 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.

x. 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).

xi. 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.

xii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

xiii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xiv. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.

xv. 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 Trans boundary 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.

xvi. 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.

xvii. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.