MINUTES OF THE 116TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 23RD, 24TH AND 25TH AUGUST, 2024.

The 116th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 23rd, 24th and 25th August, 2024 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 23rd, 24th, 25th, 26th & 27th July, 2024. 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 : August 23rd, 2024 [Friday]

A. Consideration of proposals :

1. Proposed B+G+11 Multistoried Residential Project "AMBE HEIGHTS" by M/s Shree Shyam Developers at Saheed Ashram Road, Jhousagarhi, Distt.: Deoghar, Jharkhand.

(Proposal no.: SIA/JH/INFRA2/493167/2024)

Name of the consultant : Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category: B2 - 8(a) Building and Construction Projects – Application for Environment Clearance (EC) as per EIA notification, 2006.

Salient Features of The Project:

Item	Details
Project Name	Proposed Multistoried Residential Project "AMBE HEIGHTS" [B+G+11] over Revenue JB no. 1229 and Khesra No. 643P, 644P, 645P and 646P at Saheed Ashram Road, Jhousagarhi, District – Deoghar, Jharkhand of M/s. Shree Shyam Developers

Location

Revenue JB no. 1229 and Khesra No. 643P, 644P, 645P and 646P at Saheed Ashram Road, Jhousagarhi, District – Deoghar, Jharkhand.

Sl. No.	Latitude	Longitude
1	24° 28' 55.30" N	86° 42' 31.54" E
2	24° 28' 54.89" N	86° 42' 32.48" E
3	24° 28' 55.55" N	86° 42' 33.73" E
4	24° 28' 57.08" N	86° 42' 34.54" E
5	24° 28' 56.85" N	86° 42' 36.35" E
6	24° 28' 55.12" N	86° 42' 35.94" E
7	24° 28' 54.91" N	86° 42' 34.88" E
8	24° 28' 54.27" N	86° 42' 34.77" E
9	24° 28' 53.76" N	86° 42' 33.77" E
10	24° 28' 53.32" N	86° 42' 33.59" E
11	24° 28' 53.84" N	86° 42' 32.01" E
12	24° 28' 54.61" N	86° 42' 32.37" E
13	24° 28' 55.03" N	86° 42' 31.41" E

Total Built-Up Area & its break - up

Description	Total Area
Plot Area	7099.04 sqm, 1.754 Ac
Proposed Ground Coverage (permissible – 2484.66 sqm ~35%)	2409.83 sqm (33.95%)
Greenbelt & Plantation Area	1065.00 (15.00%)
Internal Road & Paved Area	2074.49 sqm (29.22%)
Open, Green area & Amenities	1549.72 sqm (21.83%)
Total Built up Area	28409.42 sqm
F.A.R (permissible – 21297.12 sqm ~3.00)	21069.77 sqm ~ 2.97
Maximum Height of Building (permissible – 41.73 m)	41.48 m
Total no. of dwelling units	Block A- 72 + Block B - 66 = 143 2BHK-11; 3BHK-99 & 4BHK-33
No. of floors	B + G + 11 (Block A & B)

Particular	Residential Block	Retail Area - shops
Height	41.48 Meter (max.)	
Number of Block	2 towers (B+G+11)	Retail area – 44.25 sqm in Ground floor

Population	Total No. of Occupancy: 759	Total no. of population:835
Municipal Solid Waste	Total Waste = 352.95~ 353 kg/day Bio-Degradable = 141.18~ 141 kg/day Non-Biodegradable= 211.77~ 212 kg/day	
Parking	Total 204 ECS (Equivalent Car Space Provided) provided for residential area and visitors. Total no. of parking provided for Two-wheeler are 187. Total parking Area –5975.74 sqm	
Power Requirement	Total Power Required: 800 KW. The power shall be sourced by (State Electricity Board-JBVNL). DG Set: 01 no. of DG sets having total capacity of 1010KVA Total Solar Lighting 40 KW (5% of total electricity consumption)	
RWH Pits	2 Nos. of Recharge pit with one Recharge well	
Plot Area	**7099.04 sqm** or 1.754Ac or 0.709 ha	
Proposed Ground Coverage	2409.83 sqm (33.95% of the plot area)	
Greenbelt/Plantation	1065.00 sqm(15.00% of the plot area)	
Internal Road & Paved Area	2074.49 sqm(29.22% of the plot area)	
Pen space, Green area & Amenities	1549.72 sqm (21.8% of the plot area)	
Total Built Up Area	28409.42 sqm	
F.A.R	2.97 ~ 21069.77 sqm (Permissible: 3.00)	
Maximum height of building	41.48 m	
Total no. of Dwelling Units	Total: 143 Residential flats – [2-BHK 11 + 3-BHK-99 + 4-BHK 33 nos.]	
No. of Floors	Lower Ground Floor (Basement), Ground Floor, 1-11th Floor	
Total Project Cost	Rs. 99.42 Crores.	
EMP Cost (Construction Phase)	Capital Cost: Rs. 40.15 Lakhs Recurring Cost: Rs. 6.30 Lakhs	
EMP Cost	Capital Cost: Rs.103.00Lakhs Recurring Cost: Rs. 14.40 Lakhs	

(Operational Phase)	
Disaster Management	Separate Assembly Points will be marked for each section – total 4 nos. Residents will be made aware of the safety protocols and escape routes.

LAND DETAILS

Revenue J.B. no.	Plot no.
1229	643 (P), 644 (P), 645 (P) & 646 (P)

❖ **Water & Wastewater**

Water Demand	Residential	Total	Source
Domestic	51.75 KLD	51.75 KLD	Fresh Water
Flushing	25.3 KLD	25.3 KLD	Treated Water
Horticulture,road and vehicle washing, HVAC/discharge to nearest drain	--	22.7 KLD	Treated Water
Total	**77.05 KLD**	**99.75 KLD**	

S. No.	Description	Type of flats	Number of flats	Total Population	Domestic water requirement @ 66.5 lpcd	Flushing water requirement @ 33.5 lpcd	Total water requirement
1	Tower A	3 &4 BHK	77	407	27065.5	13634.5	40700
2	Tower B	2, 3 &4 BHK	66	352	23408.00	11792.0	35200
3	Floating population @ 10 %			76	760	390	1150
	Total		**143**	**835**	**51233.5**	**25806.5**	**77050**

STP: STP of capacity 80KLD, based on MBBR technology will be installed.Wastewater generated 66.70 KLD will be processed in the STP and treated water 60 KLD will be reused for

various purposes, such as flushing, horticulture, etc. Excess treated water12 KLD will be discharged topublic sewer after meeting the CPCB Standards (Only during rainy season).

❖ **Connectivity Road**

Site is flat land with maximum elevation of 247.77 m AMSL. Project site is well connected with service road. Site also well connected by Sahid Ashram Road to Deoghar-Sarwan Road which is Nearer (0.37 Km) to the project site towards Southwest direction. Approach road for the proposed project site Connects with metal road at 3.10 m in West direction.

Railway

Baidyanathdham railway station is 1.86 km away in Northwest. Deoghar railway station is 3.48 km away in Northwest.

Air

Deoghar Airport 3.80 km in Southwest.

❖ **Project Surroundings**

Project site is inDeoghar Municipal Corporation area.

Nearest Airport	- Deoghar Airport
Nearest Railway Station	-Baidyanathdham Railway Station
Nearest City	- Deoghar
River Body	- DarhwaNadi, Ajay River
Site Topography	- Mostly flat with slight undulation
Archaeological Site	- None within 10 km Radius
National Parks	- None within 10 km Radius

Protect / Reserve Forest - Chordiha PF, Bhandarkal PF, Resnidih PF, Baliya Gadi PF, Daliraydih PF aresituated within 10 km radius

Seismicity - Zone III

❖ **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, plinth filling, etc. Surplus C & D waste ~ 1636.70 tons would be handed over to Municipal Waste Management Facility. E-Waste &Hazardous waste cans of paints would be collected in separate

coveredareas and handed over to registered recyclers. Recyclable wastes including bags, packing, pieces of steel rods etc. will be sold to scrap dealers.

There are some temporary sheds present at the northern part of the project site. They will be for storage till the end of the construction period and then demolished. Around 2.81 T of C & D Waste shall be generated from the same which will be handed over to Municipal Waste Management Facility along with other C & D Waste.

Operational Phase

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

- ✓ Recyclable Waste - Blue
- ✓ Wet (Bio-Degradable) Waste - Green
- ✓ E-Waste - Yellow
- ✓ Hazardous Waste - Red
- ✓ Inert Waste - Blue

- E-Waste & Hazardous Wastes generated, if any, would be handed over to authorized recyclers/re-processors.
- Total Municipal Solid Waste generation will be approx. 0.353 T/day.
- Biodegradable Waste – 0.141T/Day (waste vegetables and foods etc.)
- The biodegradable organic wastes will be treated inside the premises by OWC (Organic Waste Converter) having capacity of 150 kg/day.
- Non-biodegradable or recyclable –0.212Ton/day. (Papers, cartons, thermo-cool, plastics, glass etc.)
- Non-recyclable wastes will be disposed through Govt. approved agency with help of local body.
- Area for storage and segregation of waste =5m^2
- Area requirement for organic waste composting = 5.5m^2.
- Total area proposed for storage &organic waste composting = 20.0m^2

❖ **Energy Saving Measures:**

- Use of local building material to reduce pollution & transportation energy.
- All the pumps shall have minimum efficiency as per ECBC norms.
- Energy efficient building envelope-use of fly ash bricks/AAC blocks for external walls.
- Insulation to roof.
- Programmable switching arrangement for external lighting to prevent wastage of energy.
- Energy efficient lighting fixture LED lamps to be provided in common areas.
- Adequate solar panels (40 KW~ 5% of total power requirement)will be installed to conserve energy.
- Total energy conservation at final stage is envisaged as 20.88% of the energy requirement of the project.

Statutory Clearances :

1	Land Docs	:	M/s Shree Shyam Developers has entered in to development agreement with the land owners.
2	DFO Territorial		DFO, Deoghar Forest Division, Deoghar vide letter no. 890, dated 15.07.2024 certified that the distance of reserved / protected forest is 19 meters from project site.
3	DFO Wildlife	:	DFO, Wildlife Hazaribagh vide letter no. 1783, dated 13.08.2024 certified that proposed project site is out side Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
4	CO certificate	:	The CO, Deoghar vide letter no. 1082, dated 13.07.2024 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. DEO /EAST /B/ 122321/642092, dated 30.12.2021 valid up to 29.12.2029.
6	Building Plan approval	:	Conceptual plan submitted. The same has been submitted to Deoghar Municipal Corporation for approval vide application no. DGMC/GH/0050/W28 /2024 /REV1 dated 20.07.2024.
7	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 3937/Tech./2024, dated 23.06.2024.
8	CGWA	:	Application for water withdrawal permission has been submitted to CGWA vide application no. 21-4/2002/JH /INF/2024 dated 15.08.2024.
9	Affidavit project area & No construction	:	An affidavit submitted stating that no construction activity has been yet started at proposed site.

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed B+G+11 Multistoried Residential Project "AMBE HEIGHTS" by M/s Shree Shyam Developers at Saheed Ashram Road, Jhousagarhi, Distt.: Deoghar, 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. The existing temporary structure on the site will be dismentle & disposed, following the C&D Rules, 2016.

II. Provision for additional exit to the campus must be provided for emergency purposes.

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).

IV. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.

V. 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.

VI. All raw material to be stored only under covered shed.

VII. 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.

VIII. 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.

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

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

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

XII. 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.

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

XIV. 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.

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

XVI. 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.

XVII. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

XVIII. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

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B. District Magistrate –cum- Deputy Commissioner, Dumka or through authorized representative.

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

The DSR was submitted by District Magistrate -Cum- Deputy Commissioner, Dumka. He was represented by Mr. Najish Rana, District Mining Officer, Dumka at the SEAC meeting on 23.08.2024.

During the meeting the DMO, Dumka 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 DSR has not been prepared as per the format provided in the above notification. Hence, DSR is to be resubmitted after suitable amendments to meet all the requirements of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

Hence, it is deferred and will be taken up for further consideration after the revised DSR is submitted.

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C. Deputy Commissioner, Seraikela-Kharsawan or through authorized representative.

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

The Final DSR was submitted by Deputy Commissioner, Seraikelaa-Kharsawan. He was represented by Shri Jyoti Shankar Satpati, District Mining Officer, Seraikelaa-Kharsawan at the SEAC meeting on 23.08.2024.

During the meeting the DMO, Seraikelaa-Kharsawan 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 DSR has not been prepared as per the format provided in the above notification. Hence, DSR is to be resubmitted after suitable amendments to meet all the requirements of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

Hence, it is deferred and will be taken up for further consideration after the revised DSR is submitted.

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D. Deputy Commissioner, Khunti or through authorized representative.

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

The Final DSR was submitted by Deputy Commissioner, Khunti. He was represented by Shri Ram Naresh Singh, District Mining Officer, Khunti at the SEAC meeting on 23.08.2024.

During the meeting the DMO, Khunti 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 16.06.2024. As per the Sub Divisional Committee no comments / observations were obtained.

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 Khunti is recommended to SEIAA for approval.

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E. Consideration of proposals :

1. Hirhi Brick Clay Deposit of M/s Chand Bricks (Prop. : Shri Rakesh Kumar Sahu), Village : Hirhi, Thana : Lohardaga, Distt.: Lohardaga, Jharkhand (1.13 Ha).

(Proposal no.: SIA/JH/MIN /493186/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for : Proposed Capacity- 1600 cum soil/Season or 8,00,000 Bricks/Season.

Project and Location Details:

Sl	Parameter		Details
1.	Project Name	:	Hirhi Brick Clay Deposit
2.	Lessee:	:	M/s Chand Bricks Prop. -Sri Rakesh Kumar Sahu S/O- Sri Chand Sahu
3.	Lease Address	:	Village : Hirhi, Thana : Lohardaga, Distt.: Lohardaga,

			Jharkhand	
4.	Lease Area	:	1.13 ha	Acres-2.80Acres
5.	Type of Land	:	Non Forest – Raiyati Land	
6.	Project Cost	:	Rs. 40 Lakhs	
7.	EMP Budget	:	Capital:8.59 Lakh	Recurring: 3.82Lakh / year
8.	New or Expansion	:	New	
9.	Mineable Reserves	:	Cum.: 11950 cum	Tonnes: 15535 tonnes
10.	Mine Life	:	7.46 or 7.50 seasons	
11.	Man power	:	23	
12.	Water Requirement	:	6.17 ~ 6.20 KLD (Drinking: 0.23 KLD, Dust Suppression: 2.91 KLD, Plantation: 3.03 KLD)	
13.	Water Source	:	From Nearby villages by tankers	
14.	DG Set /power	:	-	
15.	Crusher	:	No crusher	
16.	Nearest Water Body	:	Bora Nala Approx 2.55 Km towards East direction.	
17.	Nearest Habitation	:	Asna, Approx. 0.02 km towards North direction.	
18.	Nearest Rail Station	:	Hendlaso Bhokta Bagicha Railway Station at a distance of 1.20 km towards West direction from site.	
19.	Nearest Airport	:	Birsa Munda Airport, at a distance of 64.0 km in ESE direction from mine site.	
20.	Nearest Forest	:	Open Mixed Jungle Approx 2.50 Km towards SE direction Protected forest, Approx 2.30 Km towards NE direction	
21.	Road & Highways	:	NH-143A, Approx, 0.68 km towards SE direction.	

CO-ORDINATES

1	**Latitude**		From $23^0$29' 39.46"N	To $23^0$29' 51.61"N
2	**Longitude**		From $84^0$43' 38.09"E	To $84^0$43' 39.92"E

LAND DETAILS

Khata no.	Plot no.
118	1206
237	1204 & 1205

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Lohardaga (Sadar) vide letter no. 1333, dated 13.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 1174/M, dated 04.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 702, dated 16.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Lohardaga Forest Division vide letter no. 1777, dated 07.10.2023 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 District Survey Report (DSR) of Lohardaga District (Serial no. 26, Page no. 27).
7	Gram Sabha	:	Gram Sabha conducted on 05.10.2023.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Memo No. 572/M, dated 14.08.2024.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 24.08.2024 afirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	1.13 ha	Life of Mine – 7.46 or 7.50 Years
3	Waste Generation	:	0.0cu.m	
4	Stripping Ratio	:	0: 0	
5	Working Days	:	150	
6	Benches: size & No	:	--	
7	Elevation of Mine	:	661 AMSL to 660 AMSL	
8	Ground Level Elevation	:	--	
9	Ultimate Working Depth	:	2 mtr.	
10	Water Table	:	645 mRL	

11	Topography of Mine	:	Area represents flat topography
12	Explosive Requirement	:	--
13	Diesel/Fuel requirement	:	--

Production Details

Year	Production in Cum	Production in Tonnes	Nos. of Bricks in Lac
1st	1600.00	2080	800000
2nd	1600.00	2080	800000
3rd	1600.00	2080	800000
4th	1600.00	2080	800000
5th	1600.00	2080	800000
Total	**8000.00**	**10400**	**4000000**

Land Use

Pattern of Utilization	Existing (Ha)	At the end of Plan period (ha.)
Mining/Quarrying	Nil	0.400
Storage of casted bricks	Nil	Comes under excavation
Plantation at safety Zone	Nil	0.535
Road		0.003(0.003 comes under excavation)
Total used Area	**Nil**	0.938
Unused Area	-	0.192

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION	Area/Length	No of Trees
1	Safety Zone	0.535ha	1338
2	Haul /Approach Road	0.04 km	80
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	--	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.

Solid Waste Management

There is no generation of waste.

Environment Management Plan

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	7,59,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	45,000
TOTAL		**8,59,000**	**3,82,000**

Note: *1518 plants * 500 Rs (for each plants including hedges) = 7.59 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 150 = 45,000/-

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

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 suspendedparticles in the pit. Pump having required capacity will be installed to liftaccumulated rain water from working pit and pumped to the settling tank.

- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emissionduring drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically toreduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollutioncheck will be done once in a year to keep the emissions from machineries andvehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust whiletransporting minerals and waste. Provision for water spray by tankers on 'kaccharoad shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

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 Hirhi Brick Clay Deposit of M/s Chand Bricks (Prop. : Shri Rakesh Kumar Sahu), Village : Hirhi, Thana : Lohardaga, Distt.: Lohardaga, 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).

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2. **Lodhma Stone Deposit of M/s Maa Chhinmastika Stone (Prop. : Shri Kisto Prasad Yadav), Mouza : Lodhma, Thana no. : 117, Thana : Ramgarh, Distt.: Ramgarh, Jharkhand (0.57 Ha).**

(Proposal no.: SIA/JH/MIN/493193/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 8,573 cum/annum or 24,004 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Lodhma Stone Deposit (Area- 0.57 ha. or 1.40 Acres)	
2	Lessee:	:	M/s Maa Chhinmastika Stone (Prop.- Sri Kisto Prasad Yadav) village Lodhma, PO- Chhatarmandu, PS- Ramgarh, District, Ramgarh, Jharkhand	
3	Lease Address	:	Mouza - Lodhma, Thana & District – Ramgarh, State- Jharkhand	
4	Lease Area	:	0.57 Ha	Acres- 1.40 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 40 Lakhs	
7	EMP Budget	:	Capital: Rs. 5.325 Lakhs	Recurring: Rs. 4.27 Lakhs/year
8	New or Expansion	:	New	
9	Mineable Reserves	:	130416 Cum or 365165tons	
10	Mine Life	:	10 years	
11	Man power	:	20	
12	Water Requirement	:	3.70 KLD, (Drinking: 0.20 KLD, Dust Suppression: 1.77 KLD, Plantation: 1.73 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	200 KVA	
15	Crusher	:	Yes	
16	Nearest Water Body	:	Damodar River, Approx. 0.7 km towards North direction of mine site.	
17	Nearest Habitation	:	Lodhma village, Approx.660 meters towards West direction.	
18	Nearest Railway Station	:	Ramgarh Cantonment Railway station, approx. 8.4 km towards WSW direction.	
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi approx. 44.3 km towards SW direction	

20	Nearest Forest	:	Protected forest, Approx. 8.25 km towards NW direction of mine site. Protected forest, Approx. 8.5 km towards SSW direction of mine site. Open jungle (Sal), Approx. 3.5 km towards NW direction of mine site.
21	Road & Highways	:	NH-20, Approx. 4.5 km in West direction.

CO-ORDINATES

1	Latitude		From 23°37'34.6" N	To 23°37'37.52" N
2	Longitude		From 85°35'51.54" E	To 85°35'55.14" E

LAND DETAILS

Khata no.	Plot no.
20	1692

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ramgarh vide letter no. 858/Khanan, dated 11.08.2023.
2	CO	:	The CO, Ramgarh vide letter no. 55, dated 28.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ramgarh vide memo no. 860/Khanan, dated 23.07.2024 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. 1207, dated 24.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Ramgarh vide letter no. 128, dated 27.01.2023 certified that the distance of demarcated forest is 500 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Ramgarh District (Sl. no. 03, Page no. 50).
7	Gram Sabha	:	BDO, Ramgarh vide letter no. 674, dated 05.08.2024 informed that Gram Sabha conducted on 26.07.2024.

8	Mine Plan Approval	:	Approved by Distirct Mining Officer, Ramgarh vide Letter No. 1078/Mining, dated 17.10.2023.
9	Qualified Person	:	Shri Surendra Sai was present in the meeting and affirmed that the mine plan has been made by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.57 Ha / 1.40 Acres	Life of Mine – 10 years
3	Waste Generation	:	1260 cum of Gritty soil and 2255 cum of Intercalated Waste generated during the plan period	
4	Stripping Ratio	:	1:0.05	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	317 AMSL to 315 AMSL	
8	Ground Level Elevation	:	315AMSL	
9	Ultimate Working Depth	:	293 AMSL (22 m BGL)	
10	Water Table	:	283 - 280 AMSL (32-35 m BGL)	
11	Topography of Mine	:	Area represents a almost flat land	
12	Explosive Requirement	:	70 kg/day	
13	Diesel/Fuel requirement	:	125 litre/day	

Production Details

Year	Removal of Gritty Soil in cum	Intercalated waste in cum	Production of Stone		Bench (AMSL)
			in cum	in tones	
1st	480	451	8572	24002	317-311
2nd	780	451	8573	24004	317-311
3rd	-	451	8571	24000	311-305
4th	-	451	8572	24002	311-305
5th	-	451	8571	24000	305-299
Total	**1260**	**2255**	**42859**	**120008**	

Land Use

Pattern of Utilization	Present Land use (Ha)	At the End of plan period	At the End of Conceptual period
Excavation	-	0.26	0.36 (water reservoir)
Safety Zone	-	0.21 (plantation)	0.21 (plantation)
Road	0.01	0.03	-
Crusher	-	0.01	-

Total area in use	**0.01**	**0.51**	**0.57**
Balance Unused Area	0.56	0.06	0.00
Total Applied Area	**0.57**	**0.57**	**0.57**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.21 ha.	525
2	Along Approach Road	:	120 m	240
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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	4,32,500	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		**5,32,500**	4,27,000

Note: *865 plants * 500 Rs (for each plants including hedges and fences) = Rs. 4.325 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day 300* 300 = 90000/-

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

- 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

Total 2255 cum of Intercalated waste and 1260 cum of Gritty soil shall be generated during this plan period. Gritty soil & intercalated waste will be removed and this will be used in road dressing & plantation.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 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, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1	5	4	3	2	1

(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 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 Lodhma Stone Deposit of M/s Maa Chhinmastika Stone (Prop. : Shri Kisto Prasad Yadav), Mouza : Lodhma, Thana no. : 117, Thana : Ramgarh, Distt.: Ramgarh, Jharkhand (0.57 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. 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. 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.
III. 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.
IV. 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.
V. 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.
VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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3. **Kori Stone Deposit of M/s Adivashi Development Enterprises (Partners : (i) Shri Jhalu Bediya (ii) Shri Bigle Bhagat (iii) Shri Fuldev Bediya), Mouza : Kori, Thana : Ramgarh, Distt.: Ramgarh, Jharkhand (2.02 Ha).**

(Proposal no.: SIA/JH/MIN/493244/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 33170.20 cum/annum or 89559.54 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kori Stone Deposit	
2	Lessee:	:	M/s Adivashi Development Enterprises (Partners- Sri Jhalu Bediya, Sri Bigle Bhagat & Sri Fuldev Bediya)	
3	Lease Address	:	Mouza - Kori, Thana & District – Ramgarh, State- Jharkhand	
4	Lease Area	:	2.02 ha.	Acres- 5.00 Acre
5	Type of Land	:	Non-Forest (Raiyati Barren land)	
6	Project Cost	:	Rs. 95 Lakhs	
7	EMP Budget	:	Capital: 16.925Lakhs	Recurring: 4.27 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	894518 tons	
10	Mine Life	:	10 years	
11	Man power	:	27	
12	Water Requirement	:	11 KLD	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Dhobdhab Nala, Approx. 4.8 km towards North direction of mine site.	
17	Nearest Habitation	:	Korivillage, Approx.260 meters towards S direction.	
18	Nearest Railway Station	:	Barkakana Junction Railway station, approx. 5.5 km towards NE direction.	
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi approx. 33 km towards SSW direction	
20	Nearest Forest	:	Protected forest, Approx. 2.2 km in S direction Protected forest, Approx. 4.5 km in SE direction. Protected forest, Approx. 0.5 km in N direction	
21	Road & Highways	:	SH-2, Approx. 4.0 km in North direction.	

CO-ORDINATES

1	Latitude	:	From N 23°35'26.27"	To N 23°35'34.31"
2	Longitude	:	From E 85°25'16.97"	To E 85°25'27.53"

LAND DETAILS

Khata no.	Plot no.
08	141 (P)
12	126 (P)
23	120 (P) & 121 (P)
33	122 (P), 123 (P) & 155 (P)
37	149 (P)
38	124 (P) & 125

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ramgarh vide letter no. 47/Khanan, dated 18.01.2024.
2	CO	:	The CO, Patratu (Ramgarh) vide letter no. 2875, dated 12.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ramgarh vide memo no. 167/Khanan, dated 13.02.2024 certified that 01 other LoI (4.00 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2573, dated 19.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Ramgarh vide letter no. 2356, dated 27.10.2023 certified that the distance of demarcated forest is 255 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Ramgarh District (Sl. no. 09, Page no. 52).
7	Gram Sabha	:	Gram Sabha conducted on 10.10.2023.
8	Mine Plan Approval	:	Approved by Distirct Mining Officer, Ramgarh vide Letter No. 178/Mining, dated 16.02.2024.

9	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 24.08.2024 afirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Open cast mechanized method	
2	Quarry Area	:	2.02Ha/5.00 Acre	Life of Mine – 10 Years
3	Waste Generation	:	9957 cum of Intercalated waste shall be generated	
4	Stripping Ratio	:	1:0.02	
5	Working Days	:	300	
6	Benches: size & No	:	6m	
7	Elevation of Mine	:	405m ASML to 440m ASML	
8	Ground Level Elevation	:	405m ASML	
9	Ultimate Working Depth	:	405m ASML	
10	Water Table	:	390m ASML	
11	Topography of Mine	:	Area represents anundulating topography land.	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	250 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum) in plan period	Waste (cum) in ultimate
1st	30523.50	82413.45	2203.50	9261.00
2nd	33270.00	85337.55	2266.50	
3rd	33170.20	89559.54	2326.80	
4th	29716.00	80233.20	1564.00	
5th	30327.80	81885.06	1596.20	
Total	**157007.50**	**419428.80**	**9957.00**	**9261.00**

Land Use

Type of Land	Present Land Use (in Ha)	At the End of plan period	At the end of Conceptual period
Quarry	-	1.136	1.136 (Converted in to water reservoir)
Safety Barrier	Nil	0.881	0.881 (tree plantation)
Road	0.008	0.003	0.003

Balanced unused Area	2.012	0.00	0.00
Total Applied Area	2.02	2.02	2.02
(Source: Mine Plan)			

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.881ha	2210
2	Along Approach Road	:	150 m	300
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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	13,05,000	2,00,000
4	Construction and maintenance of haul road	1,07,500	90,000
TOTAL		**14,12,500**	**5,27,000**

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

- 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

Total 9957 cum of Intercalated waste shall be generated during this plan period. The area is covered with 1m of overburden. During quarry development in 1st, 2nd, 3rd, 4th & 5th year intercalated waste will be removed and this will be used for backfilling.

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, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	*15*	12	9	6	3
C4 (Minor)	*20*	*16*	12	8	4

C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	**High Risk**	**1-4**
2	Medium Risk	5-12
3	*Low Risk*	*13-25*

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the

weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area,

utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.

j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kori Stone Deposit of M/s Adivashi Development Enterprises (Partners : (i) Shri Jhalu Bediya (ii) Shri Bigle Bhagat (iii) Shri Fuldev Bediya), Mouza : Kori, Thana : Ramgarh, Distt.: Ramgarh, 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).

II. 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.

III. 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.

IV. 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.

V. 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.

VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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4. **Balrampur Stone Deposit of Shri Mithlesh Kumar Mahto, Mouza : Balrampur, P.S. : Jaridih, Distt.: Bokaro, Jharkhand (0.748 Ha).**

(Proposal no.: SIA/JH/MIN/492671/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 6,363 cum/annum or 17,817 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Balrampur Stone Deposit	
2	Lessee:	:	Sri Mithlesh Kumar Mahto At Village- Balrampur, P.O. - Chilgadda, P.S. – Jaridih, District – Bokaro, Jharkhand, PIN Code- 829301	
3	Lease Address	:	Mouza - Balrampur, P.S. - Jaridih, District – Bokaro, State- Jharkhand	
4	Lease Area	:	0.748ha.	Acres- 1.85 Acre
5	Type of Land	:	Non-Forest (Raiyati Barren land)	
6	Project Cost	:	Rs. 40 Lakhs	
7	EMP Budget	:	Capital: 10.415Lakhs	Recurring: 4.27 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	62679 Cum or 175502 tons	
10	Mine Life	:	10 years	
11	Man power	:	25	
12	Water Requirement	:	8.37 ~ 8.40 KLD (Drinking: 0.25 KLD, Dust Suppression: 4.40 KLD, Plantation: 3.72 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Izri River Approx. 2.46 km towards South direction of mine site. Garga River Approx. 4.47 km towards North direction of mine site. Garga Dam, Approx. 6.28 km towards NE direction of mine site.	
17	Nearest Habitation	:	Balrampur village, Approx. 240 meters towards ESE direction.	
18	Nearest Railway Station	:	Radhagaon Railway station, approx. 6.84 km towards ENE direction.	

19	Nearest Air Port	:	Birsa Munda Airport, Ranchi approx. 77.23 km towards WSW direction.
20	Nearest Forest	:	Fairly dense Jungle Mainly Sal, Approx. 3.95 km towards WSW direction of mine site. Fairly dense Jungle Mainly Sal, Approx. 3.90 km towards WNW direction of mine site. Open Scrub, Approx. 4.1 km towards South direction of mine site.
21	Road & Highways	:	NH-320, Approx. 8.93 km in North direction.

CO-ORDINATES

1	Latitude	:	From N 23° 35' 0.7284"	To N 23° 35' 4.6932"
2	Longitude	:	From E 86° 1' 17.6451"	To E 86° 1' 23.9632"

LAND DETAILS

Khata no.	Plot no.
41	37 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 293/Khanan, dated 03.02.2020.
2	CO	:	The CO, Jaridih (Bokaro) vide letter no. 96, dated 13.02.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. During the appraisal habitation within 500 meter was noticed for which an EMP has been submitted.
3	DMO	:	DMO, Bokaro vide memo no. 366/Khanan, dated 10.02.2020 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. 300, dated 08.02.2020 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 permission letter no. 20180420, dated 20.04.2018 certified that the distance of reserved / protected forest is 500 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Bokaro District (Sl. no. 01, Page no. 63).

7	Gram Sabha	:	Gram Sabha conducted on 30.05.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1189/M, dated 06.08.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized method
2	Quarry Area	:	0.748Ha/1.85 Acre | Life of Mine – 10 Years
3	Waste Generation	:	1669 Cum of Intercalated waste and 1478 cum of Gritty soil
4	Stripping Ratio	:	1:0.05
5	Working Days	:	300
6	Benches: size & No	:	6m
7	Elevation of Mine	:	270 ASML to 273 ASML
8	Ground Level Elevation	:	270 ASML
9	Ultimate Working Depth	:	267 ASML
10	Water Table	:	256 ASMLto 243 ASML
11	Topography of Mine	:	Area represents a gently sloping land.
12	Explosive Requirement	:	70kg/day
13	Diesel/Fuel requirement	:	70 litre/day

Production Details

Year	Removal of Gritty Soil		Intercalated waste in cum	Production of Stone		Bench (AMSL)
	in cum	in tones		in cum	in tones	
1st	322	483	334	6337	17742	273-267
2nd	170	255	332	6298	17636	273-267
3rd	340	510	335	6363	17817	273-267
4th	374	561	333	6331	17726	273-267
5th	272	408	335	6363	17817	273-267
Total	**1478**	**2217**	**1669**	**31692**	**88738**	

Land Use

Type of Land	Present Land Use (in Ha)	At the End of plan period (in Ha)	At the end of mine (in Ha)	Conceptual Period (in Ha)		
				Public Use	Water body	Plantation
Quarry	0.050	0.392	0.395	---	0.386	0.009 (Dead Bench Plantation)
Safety Barrier	Nil	0.353	0.353	---	---	0.353

		(Plantation)	(Plantation)			
Road	0.017	Nil	Nil	---	---	---
Old Crusher	0.015	Nil	Nil	---	---	---
Total Area in Use	0.082	**0.745**	**0.748**	---	**0.386**	**0.362**
Balanced unused Area	0.666	0.003	Nil	---	---	---
Total Applied Area	0.748	**0.748**	**0.748**	**0.748**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.353/883	883
2	Along Approach Road	:	440m	880
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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	9,31,500	1,00,000
4	Construction and maintenance of haul road	1,10,000	90,000
TOTAL		**10,41,500**	**4,27,000**

Note: *1863 plants * 500 Rs (for each plants including hedges and fences) = Rs. 9.315 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-

**** 2.5 lakh per kilometer (250000 * 0.440 km haul road = 1,10,000/-)***

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

- 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

Total 1669 cum of Intercalated waste and 1478 cum of Gritty soil shall be generated during this plan period. The area is covered with a layer of gritty soil. During quarry development in 1st, 2nd, 3rd, 4th & 5th year gritty soil and intercalated waste will be removed and this soil & waste will be used in haul road dressing & plantation.

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, safety shoes, 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 Balrampur Stone Deposit of Shri Mithlesh Kumar Mahto, Mouza : Balrampur, P.S. : Jaridih, Distt.: Bokaro, Jharkhand (0.748 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).

II. 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.

III. 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.

IV. 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.

V. 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.

VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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5. **Nimchua Stone Deposit of Shri Goutam Mahata, Mouza : Nimchua, Cicle : Maheshpur, Distt.: Pakur, Jharkhand (1.311 Ha).**

(Proposal no.: SIA/JH/MIN/493541/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 19,150 cum/annum or 51,705 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Nimchua Stone Deposit (Area- 1.311 ha or 3.24 Acres)	
2	Lessee:	:	Sri Goutam Mahata S/o Sri Bijon Mahata Village – Dakbangla Para, P.O. – Nalhati, District – Birbhum, West Bengal - 731243	
3	Lease Address	:	Mouza - Nimchua, Circle - Maheshpur, District – Pakur, State- Jharkhand	
4	Lease Area	:	1.311 Ha	Acres- 3.24 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 60Lakhs	
7	EMP Budget	:	Capital: Rs. 7.675Lakhs	Recurring: Rs. 4.27Lakhs/year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1,59,575 Cum or 4,30,852.5 tons	
10	Mine Life	:	9 years	
11	Man power	:	20	
12	Water Requirement	:	5.52 ~ 5.6 KLD, (Drinking: 0.20 KLD, Dust Suppression: 2.65KLD, Plantation: 2.67 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No	
16	Nearest Water Body	:	TirpitaNadi, Approx. 4.85 km towards SSW direction of mine site.	
17	Nearest Habitation	:	Khagachua, Approx. 270 meters towards SW direction.	
18	Nearest Railway Station	:	Nalhati Junction, approx. 10.76 km towards ESE direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 105.30 km towards West direction	
20	Nearest Forest	:	RF, Approx. 6.91 km in South direction. RF, Approx. 6.81 km in South direction. RF, Approx. 8.08 km in South direction.	

			RF, Approx. 8.05 km in South direction. Open Mixed Jungle, Approx. 4.62 km in NE direction.
21	Road & Highways	:	NH-114A, Approx. 18.46 km in SSW direction.

CO-ORDINATES

1	Latitude		From 24°20' 50.8779" N	TO 24°20' 56.6789" N
2	Longitude		From 87°44'54.4202" E	TO 87°45'00.3558" E

LAND DETAILS

Khata no.	Plot no.
20	8 (P), 9 (P), 10 (P), 17 (P), 18 (P), 19 (P), 20 (P) & 21 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1149/M, dated 25.07.2024.
2	CO	:	The CO, Maheshpur vide letter no. 1181/Ra., dated 11.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II and also mentioned that the habitation of 36-38 house at a distance of 270 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1243/M, dated 05.08.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 289, dated 07.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1552, dated 16.12.2023 certified that the distance of forest is 780 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1314/M, dated 16.08.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 222, Page no. 131).
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 2402/Vi., dated 09.12.2023 informed that Gram Sabha conducted on 08.12.2023.

8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1328/M, dated 17.08.2024.
9	Qualified Person	:	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized method	
2	Quarry Area	:	1.311Ha / 3.24 Acres	Life of Mine – 9 years
3	Waste Generation	:	7325 cum O.B. waste shall be generated during this plan period.	
4	Stripping Ratio	:	1:0.07	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	64AMSL to 70AMSL	
8	Ground Level Elevation	:	64 AMSL	
9	Ultimate Working Depth	:	43AMSL(21 m BGL)	
10	Water Table	:	14 AMSL (50 m BGL)	
11	Topography of Mine	:	Area represents a small hillocks	
12	Explosive Requirement	:	90kg/day	
13	Diesel/Fuel requirement	:	90 litre/day	

Production Details

Year	Production of Stone		Generation of I/Waste in Cum	O/B Waste in Cum	Total Waste in Cum	Bench (AMSL)
	in cum	in MT				
1st	18900	51030	Nil	3225	3225	66.50-61.00
2nd	19150	51705	Nil	3400	3400	66.00-55.00
3rd	15850	51300	Nil	700	700	61.00-55.00
4th	18975	51232.50	Nil	00	00	61.00-49.00
5th	19050	51435	Nil	00	00	55.00-43.00
Total	**91,925**	**2,56,702.5**	**Nil**	**7,325**	**7,325**	

Land Use

Pattern of Utilization	Existing (Ha)	At the End of Plan Period (Ha)	At Conceptual Period (Ha)
Excavation	Nil	0.625	0.889 (0.068 ha area shall be backfilled, 0.821 ha converted into water reservoir)
Waste Dump	Nil	0.110	Comes Under Mining
Road	Nil	0.027	Comes Under Mining

Safety Zone	Nil	0.422 (Plantation)	0.422 (Plantation)
Total	**Nil**	**1.184**	**1.311**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.422ha.	1055
2	Along Approach Road	:	90m	180
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	6,67,500	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		**7,67,500**	4,27,000

Note: *1335 plants *500Rs (for each plants including hedges and fences) = Rs. 6.675 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
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- 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

Total 7325 cum O.B. waste shall be generated during this plan period. The waste dumping is temporarily dump southern boundary of the applied lease area then in conceptual period backfill at exhausted area.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 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.
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- 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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- 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.

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Probability/Likelihood of Occurrence of Hazard

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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, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	**4**	**3**	**2**	**1**
C2 (Major)	10	8	6	**4**	**2**
C3 (Moderate)	*15*	12	9	6	**3**

C4 (Minor)	*20*	*16*	12	8	4
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	**High Risk**	**1-4**
2	Medium Risk	5-12
3	*Low Risk*	*13-25*

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°

- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

- Rough access roads
- Time pressure

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

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

Transportation

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

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Nimchua Stone Deposit of Shri Goutam Mahata, Mouza : Nimchua, Cicle : Maheshpur, Distt.: Pakur, Jharkhand (1.311 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).
II. 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.
III. 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.
IV. 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.
V. 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.

VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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6. **Lakhipahari Stone Mine of Shri Mukhleshur Alam, Village : Lakhipahari, P.S. : Pakur, Distt. : Pakur, Jharkhand (2.21 Ha).**

(Proposal No : SIA/JH/MIN/ 480858/2024)

During the appraisal it was observed that the certified compliance report of the conditions of previous EC submitted was not appropriate as the details of the compliance could not be evidenced. Hence, PAs were asked to prepare the detail compliance report alongwith evidence of all the compliances.

The project will be taken up for consideration after submission of above document.

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7. **Asni Stone Mine of M/s RKD Construction Pvt. Ltd., Village : Asni, P.S. : Gumla, Distt.: Gumla, Jharkhand (2.92 Ha).**

(Proposal no.: SIA/JH/MIN/469430/2024)

During the appraisal it was found that the PAs have not applied to Regional Office, MoEF&CC, Govt. of India, Ranchi for certified compliance report of the conditions of previous EC. They have obtained certified compliance report of the conditions of previous EC directly from JSPCB which is not in compliance with OM no. F.No. IA3-22/10/2022-IA.III(E 177258) dated 08.06.2022 of MoEF&CC, Govt. of India.

Hence, the PA is required to obtain certified compliance report of the conditions of previous EC as required by OM no. F.No. IA3-22/10/2022-IA.III(E 177258) dated 08.06.2022 of MoEF&CC, Govt. of India.

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8. **Kashinathpur Stone Deposit of M/s Jharkhand Stone Works (Prop. : Md. Safik), Village : Kashinathpur, Anchal : Maheshpur, Distt.: Pakur, Jharkhand (2.51 Ha).**

(Proposal no.: SIA/JH/MIN /493625/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 38915.80 cum/annum and 105072.66 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kasinathpur Stone Deposit (Area- 2.51 ha. or 6.203 Acres)	
2	Lessee:	:	M/s Jharkhand Stone Works Proprietor- Md. Safik	
3	Lease Address	:	Village : Kashinathpur, Anchal : Maheshpur, Distt.: Pakur, Jharkhand	
4	Lease Area	:	2.51 Ha	Acres- 6.203 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 80 Lakhs	
7	EMP Budget	:	Capital: Rs. 9.675 Lakhs	Recurring: Rs. 4.27 Lakhs/year
8	New or Expansion	:	New	
9	Mineable Reserves	:	367013.5 Cum or 990936.45 tonnes	
10	Mine Life	:	9.4 years	
11	Man power	:	24	
12	Water Requirement	:	7.12-7.20 KLD, (Drinking: 0.24 KLD, Dust Suppression: 3.41 KLD, Plantation: 3.47 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No	
16	Nearest Water Body	:	Bansloi River Approx. 12.52 Km in NNE direction from Mine site.	
17	Nearest Habitation	:	Chandna village, Approx.300 meters towards West direction.	
18	Nearest Railway Station	:	Chatra Railway station, approx. 11.90 km towards East direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 105.0 km towards West direction.	
20	Nearest Forest	:	Open mix Jungle, approx. 5.70 km in ENE direction.	
21	Road & Highways	:	SH 07, Approx. 11.85 km in East direction.	

CO-ORDINATES

1	Latitude		From 24°21' 55.4161" N	To 24°22' 04.3269" N
2	Longitude		From 87°43' 51.0070" E	To 87°43' 57.3380" E

LAND DETAILS :

Khata no.	Plot no.
30	5
39	2, 6, 7, 8 & 10

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The LOI has been issued by District Mining Office, Pakur vide memo no. 1132/M dated 23.07.2024.
2	CO	:	The CO, Maheshpur vide letter no. 772/Ra., dated 22.09.2020 has mentioned the plot of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1222/M, dated 02.08.2024 certified that the 01 other mining lease area (4.09 Acre) exists within 500 m radius from proposed project site and total area is 10.293 Acre or 4.17 Ha.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 607, dated 23.03.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 727, dated 13.04.2021 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1336/M, dated 21.08.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 165, Page no. 131).
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 844/Vi., dated 08.09.2020 informed that Gram Sabha conducted on 28.08.2020.
8	Mine Plan Approval	:	Approved by DMO, Pakur vide Memo no. 1340/M dated 21.08.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra vide e-mail dated 24.08.2024 afirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast semi mechanized method	
2	Quarry Area	:	2.51 Ha / 6.203 Acres	Life of Mine – 9.4 years
3	Waste Generation	:	16120cum of Overburden and 9756.60cum of Intercalated Waste generated during the plan period	
4	Stripping Ratio	:	1:0.13	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	101 AMSL to 96 AMSL	
8	Ground Level Elevation	:	55AMSL	
9	Ultimate Working Depth	:	49 AMSL	
10	Water Table	:	48 AMSL	
11	Topography of Mine	:	Undulating Small hillocks	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 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 tones	Bench (AMSL)
1st	4050.00	1818.000	5868.00	34542.00	93263.40	95-83
2nd	1682.00	1867.50	3549.50	35482.50	95802.75	83-59
3rd	10388.00	1984.50	12372.50	37705.50	101804.85	95-95
4th	0.00	2048.20	2048.20	38915.80	105072.66	89-89
5th	0.00	2038.40	2038.40	38729.60	104569.92	89-83
Total	**16120.00**	**9756.60**	**25876.60**	**185375.40**	**500513.58**	-

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.550	1.812 (0.152ha area shall be Backfilled)	1.912 (0.216ha area will be partially Backfilled. After backfilling entire area will be converted into water reservoir)
Waste Dump	0.00	0.00 (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)

Road	0.067	0.001	0.0
Safety Zone	0.0	0.598 (Plantation)	0.598 (Plantation)
Total	0.617	2.412	2.510
Unused Area	1.893	0.098	0.00
Lease Hold Area	**2.510**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.598 ha.	1495
2	Along Approach Road	:	70 m	140
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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	8,67,500	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		**9,67,500**	4,27,000

Note: *1735 plants * 500 Rs (for each plants including hedges and fences) = Rs. 8.675 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-

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

- 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

Total 9756.60 cum of Intercalated waste and 16120 cum of Overburden shall be generated during this plan period. Gritty soil & intercalated waste will be removed and this will be used in road dressing & plantation.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 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.
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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**
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The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

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Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in

loading material and driving vehicles. To manage the face stability, the following measures will be taken:

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Control Measures

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

Dust generation during drilling

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

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation

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

Noise Generation during drilling

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

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

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

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

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

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

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

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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 Kashinathpur Stone Deposit of M/s Jharkhand Stone Works (Prop. : Md. Safik), Village : Kashinathpur, Anchal : Maheshpur, Distt.: Pakur, Jharkhand (2.51 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).
II. 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.
III. 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.
IV. 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.
V. 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.
VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC

****

9. **Hathigarh Stone Mine of M/s Jharkhand Stone Works (Prop. : Md. Zahoor Alam), Village : Hathigarh, P.S. : Littipara, Distt.: Pakur, Jharkhand (2.14 Ha).**

(Proposal no.: SIA/JH/MIN /493415/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Production capacity: 77550.0 cum/annum or 209385 TPA of stone

PROJECT and LOCATION Details:

Sl	Parameter		Details	
1	Project Name	:	Hathigarh Stone Mine	
2	Lessee:	:	M/S Jharkhand Stone Works, (Prop.- Md. Zahoor Alam), At - Haridanga Bazar, District- Pakur, State – Jharkhand	
3	Lease Address	:	Village – Hathigarh, PS- Litipara, District – Pakur, Jharkhand	
4	Lease Area	:	Ha:2.14 ha	Acres:5.28 Acre
5	Type of Land	:	Non Forest – Raiyati Land	
6	Project Cost	:	Rs. 120 Lakhs	
7	EMP Budget	:	Capital:15.775 Lakhs	Recurring: 6.10Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	2085750.0 Tonnes	
10	Mine Life	:	10years	
11	Man power	:	20	
12	Water Requirement	:	12.62KLD (Drinking:0.20KLD,Dust Suppression:6.67KLD, Plantation:5.75KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher installed in the lease area	
16	Nearest Water Body	:	Torai Nadi , Approx. 4.80 km towards S direction. Gumani Nadi, Approx. 9.50 km towards N direction	
17	Nearest Habitation	:	Hathigarh, 1km	
18	Nearest Rail Station	:	Pakur Railway station, approx. 18.0 km in SE direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 108 km towards SW direction.	
20	Nearest Forest	:	Guma Pahar Protected Forest , Approx. 5.50 km. in NW direction of mine site. Protected Forest , Approx. 1.50 km. in ESE direction of mine site. Protected Forest , Approx. 3.50 km. in ESE direction of mine site.	

21	Road & Highways	:	NH-133A, Approx. 0.280 km in SE direction

CO-ORDINATES

Point	Latitude	Longitude
P1	24°44'02.37" N	87°42'31.06" E
P2	24°44'00.40" N	87°42'34.11" E
P3	24°44'02.83" N	87°42'38.04" E
P4	24°44'01.02" N	87°42'41.21" E
P5	24°43'58.75" N	87°42'40.32" E
P6	24°43'59.35" N	87°42'35.87" E
P7	24°43'58.64" N	87°42'30.34" E

LAND DETAILS :

Khata No.	Plot No.
14	624 (P)
78	625 (P)
90	623 (P)

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Pakur vide memo no. 89/M, dated 21.01.2022.
2	CO	:	The CO, Littipara vide letter no. : 478/Ra, dated 24.09.2021 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 920/M, dated 25.06.2024 certified that the other mining lease area exists within 500 m radius from proposed project site and total area is 19.48 Acre or 7.88 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. : 1896, dated 01.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhawa Lake Bird Sanctuary.
5	DFO Forest Distance	:	DFO, Pakur Forest Division vide letter no. : 818, dated 28.05.2021 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
6	DSR	:	The DC – cum – District Magistrate, Pakur vide letter no. 573/M, dated 18.03.2023 has informed that this project is part of District Survey Report (DSR) of Pakur district and accordingly

			necessary action with regard to Environmental Clearance can be taken. The name of village has also identified as potential area for stone mining of DSR (Sl. No. 13, Page no. 82)
7	Gram Sabha	:	BDO, Littipara vide letter no. 1154/Vi, dated 03.11.2021 has informed that Gram Sabha conducted on 29.10.2021.
8	Mine Plan Approval	:	Approved by Additional Director, Geology, Hazaribag vide letter no. 259/G, dated 27.09.2022.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 24.08.2024 afirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi Mechanized Mining method	
2	Quarry Area	:	2.14 hectare or 5.28 acre	Life of Mine – 10 years
3	Waste Generation	:	4397.0 cum	
4	Stripping Ratio	:	1: 0.004	
5	Working Days	:	300	
6	Benches: size & No	:	6m x6m	
7	Elevation of Mine	:	86AMSLto 89AMSL	
8	Ground Level Elevation		89 AMSL	
9	Ultimate Working Depth	:	60 ASML	
10	Water Table	:	50ASML (15m bgl)	
11	Topography of Mine	:	Area represents a 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 tons	Waste in Plan Period (cum)	Waste in ultimate period (cum)
1st	74250.00	200475.00	2147.00	1171.00
2nd	75000.00	202500.00	2250.00	
3rd	77250.00	208575.00	-	
4th	77550.00	209385.00	-	
5th	77550.00	209385.00	-	
Total	**381600.00**	**1030320.00**	**4397.00**	**1171.00**

Land Use

Pattern of Utilization	Existing (Ha)	During Plan Period (ha)	After Life of Mine (ha)
Quarry	--	0.818	1.478 (Converted in to water reservoir)
Road	0.010	(Comes under quarry)	(Comes under quarry)
Safety Zone	--	0.662 (Plantation)	0.662 (Plantation)
Total area in use	**0.010**	**1.480**	**2.14**
Unused Area	2.13	0.660	--
Lease hold area	**2.14**	**2.14**	**2.14**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.662 Ha	1655
2	Along Approach Road	560m	1120
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.

Solid Waste Management

Total 4397.0 cum or 11871.90 tons waste will be generated during the plan period which shall be used in making and maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining plan period

Environment Management Plan

Sr. 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	14,37,500	2,00,000
4	Construction and maintenance of haul road	1,40,000	90,000
TOTAL		15,77,500	5,10,000

Note: *2875 plants * 500 Rs (for each plants including hedges and fences)= 14.375 lakhs Salary of Labor for haul road maintenance 1 labor*300 =300 per day, 300* 300 = 90,000/- * 2.5 lakh per kilometer (250000 * 0.56 km haul road = 1,40,000/-)

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

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, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	**4**	**3**	**2**	**1**
C2 (Major)	10	*8*	6	**4**	**2**
C3 (Moderate)	*15*	12	9	6	**3**
C4 (Minor)	*20*	*16*	12	8	**4**
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	**High Risk**	**1-4**
2	Medium Risk	5-12
3	*Low Risk*	*13-25*

Hazard identification & Risk Analysis in Stone Mining operation

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

		Exposure to Dust			
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.

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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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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.
- 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.
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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.

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 23, 24 & 25.08.2024, 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)

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10. **Salboni Stone Deposit of M/s Four Star Stone Products (Partners : Md. Sabiruddin Shaikh & Shri Gorachand Koda), Village : Salboni, Thana : Malpahari, Distt.: Pakur, Jharkhand (2.193 Ha).**

(Proposal no.: SIA/JH/MIN /492666/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Production capacity: 52135.02cum/annum or 151191.56 TPA of stone.

PROJECT and LOCATION Details:

Sl	Parameter		Details	
1	Project Name	:	Salboni Stone Deposit	
2	Lessee:	:	M/s Four Star Stone Products (Partner – Md. Sabiruddin Shaikh & Sri Gorachand Koda)	
3	Lease Address	:	Village - Salboni, Thana- Malpahari ,District – Pakur, Jharkhand	
4	Lease Area	:	Ha:2.193 ha	Acres:5.42 Acre
5	Type of Land	:	Non Forest – Raiyati Land	
6	Project Cost	:	Rs. 120 Lakhs	
7	EMP Budget	:	Capital: 10.56 Lakhs	Recurring: 6.10Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	Tonnes: 1511665.48 tons	
10	Mine Life	:	10years	
11	Man power	:	26	
12	Water Requirement	:	8.30KLD (Drinking:0.26KLD,Dust Suppression:4.22KLD, Plantation:3.82KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	Nil	
16	Nearest Water Body	:	Basloi River, Approx 3.85km in South direction of mine site.	
17	Nearest Habitation	:	Salboni, 0.20km in South direction	
18	Nearest Rail Station	:	Nagarnabi Railway station, approx. 1.80 km towards ESE direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 117.60 km towards W direction.	
20	Nearest Forest	:	Protected Forest , Approx. 4.5 km. in SW direction of mine site.	
21	Road & Highways	:	NH- 133A - Approx. 4.50 km in North direction.	

CO-ORDINATES

1	Latitude		24°35'42.9182"N	To 24°35'49.6036"N
2	Longitude		From 87°51'00.6560"E	To87°51'06.4128"E

LAND DETAILS :

Khata No.	Plot No.
15	06 (P), 07 (P), 14(P), 172 (P), 173, 174, 3/418
16	175(P) & 176(P)
28	13(P) & 15(P),

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Pakur vide Letter no. - 1810/M, dated 29.09.2020.
2	CO	:	The CO, Pakur vide letter no. : 861/Ra, dated 18.06.2020 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 785/M, dated 30.05.2024 certified that other mining lease area exists within 500 m radius of proposed project site and total area is 50.27 Acre or 20.34 Ha.
4	DFO Wild Life	:	DFO-cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2073, dated 17.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	DFO, Pakur Forest Division vide letter no. : 987, dated 15.06.2020 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
6	DSR	:	The DC-cum-District Magistrate, Pakur vide letter no. : 878/M, dated 21.06.2021 has informed that this project is part of District Survey Report (DSR) of Pakur district and accordingly necessary action with regard to Environmental Clearance can be taken. The name of village has also identified as potential area for stone mining of DSR (Sl. No. 85, Page no. 158)
7	Gram Sabha	:	BDO, Pakur vide letter no. 483/Vi. Dated 20.03.2020 informed that Gram Sabha conducted on 04.03.2020.

8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka, vide letter no. 439/DDM, dated 13.10.2023.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 24.08.2024 afirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi Mechanized Mining method	
2	Quarry Area	:	2.193 hectare or 5.42 acre	Life of Mine – 10 years
3	Waste Generation	:	33023.4 cum	
4	Stripping Ratio	:	1:0.09	
5	Working Days	:	300	
6	Benches: size & No	:	6m x6m	
7	Elevation of Mine	:	40AMSLto 31AMSL	
8	Ground Level Elevation		22 AMSL	
9	Ultimate Working Depth	:	10 ASML	
10	Water Table	:	2 ASML (20mbgl)	
11	Topography of Mine	:	Area represents a small hillock topography	
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 tons	Overburden in cum	Intercalated Waste in (cum)	Total Waste in (cum)
1st	52067.40	150995.46	9246.00	2656.5	11902.50
2nd	52067.40	150995.46	10488.00	2656.5	13144.50
3rd	52135.02	151191.56	-	2659.95	2659.95
4th	52135.02	151191.56	-	2659.95	2659.95
5th	52135.02	151191.56	-	2656.5	2656.5
Total	**260539.86**	**755565.59**	**19734.00**	**13289.4**	**33023.40**

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	After life of mine (Ha)
Quarry	--	1.085	1.708 (Entire area shall be left as water reservoir)
Road	--	0.009	--
Waste Dump	--	0.441	--
Safety Zone	--	0.485 (Plantation)	0.485 (Plantation)
Total	**0.0**	**2.020**	**2.193**
Balance	2.193	0.173	0.00
Lease Hold Area	**2.193**	**2.193**	**2.193**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.485 Ha	1212
2	Along Approach Road	300m	600
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.

Solid Waste Management

Total 33023.4 cum in situ, 41279.25 compact & 35087.36 cum loose waste shall be generated during the plan period, shall be dumped in the southern side of the applied lease area with overall height of 7m which will cover 0.441 ha

Environment Management Plan

Sr. 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	9,56,000	2, 00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		**10,56,000**	**6,10,000**

Note: *1912 plants * 500 Rs (for each plants including hedges and fences) = 9.56 lakh
Salary of Labor for haul road maintenance 1 labor*300 =300 per day, 300* 300 = 90000/-

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

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, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	**4**	**3**	**2**	**1**
C2 (Major)	10	8	6	**4**	**2**
C3 (Moderate)	*15*	12	9	6	**3**
C4 (Minor)	*20*	*16*	12	8	**4**
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	**High Risk**	**1-4**
2	Medium Risk	5-12
3	*Low Risk*	*13-25*

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock	Occasional	Major	6

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or

maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24 & 25.08.2024, 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)

II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

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11. Shyampur Stone Deposit of M/s Mandhan Minerals Corporation, Village : Shyampur, Thana : Malpahari (OP), Distt.: Pakur, Jharkhand (2.083 Ha).

(Proposal no.: SIA/JH/MIN /493205/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 23.08.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 45211.45 cum/annum or 135634.35 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Shyampur Stone Deposit (Area- 2.083 ha. or 5.147 Acres)	
2	Lessee:	:	M/s Mandhan Minerals Corporation Partner - 1. Sri Anil Kumar Tanwani, 2. Sri Dinesh Tanwani, 3. Sri Suresh Kumar Tanwani, 4. Sri Bhavesh Tanwani, 5. Sri Piyush Tanwani At - Sindhipara, District- Pakur, State – Jharkhand	
3	Lease Address	:	Village – Shyampur, Thana – Malpahari (O.P.), District – Pakur, State – Jharkhand	
4	Lease Area	:	2.083 Ha	Acres- 5.147 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 90 Lakhs	
7	EMP Budget	:	Capital: Rs. 12.35 Lakhs	Recurring: Rs. 5.10 Lakhs/year
8	New or Expansion	:	New	
9	Mineable Reserves	:	314481.35 cum or 943444.05 tons	
10	Mine Life	:	7 years	
11	Man power	:	40	
12	Water Requirement	:	10.08 ~ 10.10 KLD, (Drinking: 0.40 KLD, Dust Suppression: 5.21 KLD, Plantation: 4.47 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No, Crusher	
16	Nearest Water Body	:	Torai nadi, Approx. 5.60 km towards North direction of mine site.	
17	Nearest Habitation	:	Shyampur village, Approx.500 meters towards NE direction.	
18	Nearest Railway Station	:	Pakur Railway station, approx. 4.0 km in NE direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 114 km towards WSW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 4.60 km. in South direction of mine site. Protected Forest, Approx. 4.95 km. in SW direction of mine site.	
21	Road & Highways	:	NH-133A, Approx. 2.65 km in North direction.	

CO-ORDINATES

1	Latitude		From 24°36'42.89854" N	To 24°36'49.78566" N
2	Longitude		From 87°49'30.87973" E	To 87°49'35.73854" E

LAND DETAILS :

Khata No.	Plot No.
7	398, 399, 400, 401, 404, 405, 407, 408, 409, 410, 411, 412, 413 & 414
8	403, 402 & 406
18	397 & 415
23	392, 393, 394, 395 & 396

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Pakur vide memo no. - 381/M, dated 19.03.2024.
2	CO	:	The CO, Pakur vide letter no. : 192/Ra, dated 15.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II and also mentioned that the habitation at a distance of 350 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 524/M, dated 19.04.2024 certified that 03 other mining lease area (6.83 Acre, 3.12 Acre & 6.62 Acre) exists within 500 m radius of proposed project site and total area is 21.717 Acre or 8.79 Ha.
4	DFO Wild Life	:	DFO-cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 364, dated 02.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	DFO, Pakur Forest Division vide memo no. : 1673, dated 05.11.2022 certified that the distance of forest is 1982 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 525/M, dated 19.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 60, Page no. 149).
7	Gram Sabha	:	BDO, Pakur vide letter no. 1331/Vi. Dated 24.08.2022 informed that Gram Sabha conducted on 17.08.2022.

8	Mine Plan Approval	:	Approved by DMO, Pakur vide memo no. 1074/M, dated 16.07.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.083 Ha / 5.147 Acres	Life of Mine – 7 years
3	Waste Generation	:	6972.0 cum of Gritty Soil and 11847.95 cum of Intercalated Waste will be generated during the plan period	
4	Stripping Ratio	:	1:0.08	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	64 AMSL to 58 AMSL	
8	Ground Level Elevation	:	58 AMSL	
9	Ultimate Working Depth	:	22 AMSL (36 m BGL)	
10	Water Table	:	10-5 AMSL (48-53 m BGL)	
11	Topography of Mine	:	Area represents a moderately sloping land	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Removal of Gritty Soil	Intercalated waste in cum	Production of Stone		Bench (AMSL)
	in cum		in cum	in tones	
1st	6972.00	2365.00	44935.00	1344805.00	64-52
2nd	-	2363.90	44914.10	134742.30	58-52
3rd	-	2379.55	45211.45	135634.35	58-46
4th	-	2366.85	44970.15	134910.45	52-22
5th	-	2372.65	45080.35	135241.05	52-28
Total	**6972.00**	**11847.95**	**225111.05**	**675333.15**	

Land Use

Pattern of Utilization	Present Land use (Ha)	At the End of plan period	At the End of Conceptual period
Excavation	--	1.31 (including Temporary Dumping 0.08 ha.)	1.605 (water reservoir)
Safety Zone	--	0.478	0.478

		(Plantation)	(Plantation)
Road	0.02	0.005	--
Temporary Dumping	--	0.185	--
Parapet Wall & Garland Drain	--	0.026	--
Total area in use	**0.02**	**2.004**	**2.083**
Balance Unused Area	2.063	0.079	--
Total Applied Area	**2.083**	**2.083**	**2.083**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.478 ha.	1195
2	Along Approach Road	:	470 m	940
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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	11,17,500	1,00,000
4	Construction and maintenance of haul road	1,17,500	90,000
TOTAL		**12,35,000**	5,10,000

Note: *2235 plants * 500 Rs (for each plants including hedges and fences) = 11.175 lakh
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-
**** 2.5 lakh per kilometer (250000 * 0.47 km haul road = 1,17,500/-)***

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

- 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

Total 6972.0 cum of Gritty Soil and 11847.95 cum of Intercalated Waste will be generated during the plan period. During quarry advancement gritty soil & intercalated waste will be removed and this soil & intercalated waste will be temporarily dumped partially at the north part of the area and some of the quantity shall be used in road dressing & in 2nd year during quarry advancement intercalated waste will be removed and this intercalated waste will be temporarily dumped partially at slop dumping over the 1st year's dump and some of the quantity shall be used in road dressing, in 3rd & 4th and 5th year intercalated waste will be removed and this intercalated waste will be temporarily dumped partially and some of the quantity shall be used in road dressing. In conceptual period total removal of gritty soil & intercalated waste material including plan period's temporarily dumped materials will be backfill in lower bench of the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 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, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24 & 25.08.2024, 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)

II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

****

Day 2 : August 24th, 2024 [Saturday]

Consideration of Proposals

1. **Expansion of existing 27000 TPA M.S. Ingot unit to 1,48,500 TPA MS Ingot / Billets by installing 3x15 T (by replacement of existing 2x4 T Furnace with 2x15 T & Addition of 1x15 T IF) along with CCM- 1x2 strand, 4/7 m radius, enhancement of slag crusher capacity from 9000 TPA to 33,000 TPA and production of 1,45,500 TPA Rolled Products (TMT Bars / Structural / etc) by installing 1x25 TPH Rolling Mill along with 1x30 TPH capacity reheating furnace (for emergency use) by M/s Kumardhubi Steels Pvt. Ltd., Village : Rajpura, P.O. : Kumardhubi, Distt. : Dhanbad, Jharkhand.**

   (Proposal No. : SIA/JH/IND1/ 493102 /2024).

   Name of the consultant : Vardan Environet, Haryana.

   This is an expansion project which has been taken for appraisal on 24.08.2024.

   Project Category : 3 (a) Metallurgical Industries as per EIA Notification, 2006.

   The State Expert Appraisal Committee, Jharkhand deliberated the project during its 107th meeting held on 16-20.08.2023 and SEIAA, Jharkhand has approved the ToRs in 108th meeting held on 27th & 28th August, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2912/2023/267, date 13.09.2023. The final EIA / EMP submitted by PP to SEAC on 20.08.2024.

   The project is for obtaining environmental clearance for Expansion of existing 27000 TPA M.S. Ingot unit to 148,500TPA MS Ingot/Billets by installing 3x15T (by replacement of Existing 2x4T Furnace with 2x15T & Addition of 1x15T IF) along with 1x15T LRF and CCM-1x2 strand, 4/7m radius, enhancement of slag crusher capacity from 9,000TPA to 33,000TPA and Production of 145,500TPA Rolled Products (TMT Bars/Structural/etc) by installing 1x25TPH Rolling Mill along with 1x30TPH capacity reheating furnace (for emergency use) by M/s Kumardhubi Steels Pvt. Ltd. at Village: Rajpura, P.O: Kumardhubi, District: Dhanbad, Jharkhand within the existing plant premises of 2.02 Ha.

   Environmental Site Settings:

S. No.	Particulars	Details	Remarks
1	Total land	2.02 ha [Industrial: 2.02ha]	Land Use: Industrial Land
2	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	Total area – 2.02 Ha (4.99 Acre) [Acquired Land: 2.02 Ha,] Additional 0.55 Ha. (1.375 Acres) land for plantation.	Additional Land of 1.375 Acres has been acquired for plantation.

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td>3</td><td>Existence of habitation & involvement of R&R, if any.</td><td>R&R is not applicable
Existence of Habitation
Project Site – Nil
Study Area: Nearest
<table>
<tr><th>Habitation</th><th>Distance</th><th>Direction</th></tr>
<tr><td>Egarkunr Village</td><td>0.05km</td><td>South</td></tr>
<tr><td>Rajpura Village</td><td>0.13km</td><td>West</td></tr>
</table></td><td>--</td></tr>
<tr><td>4</td><td>Latitude and Longitude of all corners of the project site.</td><td>
<table>
<tr><th>Corner</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>A</td><td>23° 45' 50.278" N</td><td>86° 46' 3.839" E</td></tr>
<tr><td>B</td><td>23° 45' 49.465" N</td><td>86° 46' 4.886" E</td></tr>
<tr><td>C</td><td>23° 45' 47.750" N</td><td>86° 46' 5.763" E</td></tr>
<tr><td>D</td><td>23° 45' 47.070" N</td><td>86° 46' 5.403" E</td></tr>
<tr><td>E</td><td>23° 45' 47.059" N</td><td>86° 46' 3.946" E</td></tr>
<tr><td>F</td><td>23° 45' 45.246" N</td><td>86° 46' 3.829" E</td></tr>
</table></td><td>--</td></tr>
<tr><td>5</td><td>Elevation of the project site</td><td>166 m above mean sea level</td><td>--</td></tr>
<tr><td>6</td><td>Involvement of Forest land, if any</td><td>No involvement of Forest Land</td><td>--</td></tr>
<tr><td>7</td><td>Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area</td><td>Project Site: No water bodies within the project site.
Study area
<table>
<tr><th>Water Body</th><th>Distance</th><th>Direction</th></tr>
<tr><td>Khudiya River</td><td>2.79km</td><td>SSW</td></tr>
<tr><td>Barakar river</td><td>4.84km</td><td>East</td></tr>
<tr><td>Maithon Reservior</td><td>4.03km</td><td>SSW</td></tr>
<tr><td>Panchet Reservior</td><td>7.80km</td><td>SW</td></tr>
</table></td><td>--</td></tr>
<tr><td>8</td><td>Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/</td><td>No ESZ/ ESA/ National Park/ Wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve within 10km radius of the project site. There is no any Reserve forest only few protected forest are present in 10km radius.</td><td>--</td></tr>
</table>

S. No.	Particulars	Details	Remarks
	tiger reserve/ elephant reserve etc. if any within the study area	• Puyaldih PF is at 2.71 km in NNE direction • Gogna PF is at 4.43 km in NE direction • Maithon PF is at 6.08 km in ENE direction	

Khata no. & Plot no. of the project :

Khata No.	Plot No.
3	690, 697
97	695
98	691, 692, 693
203	696

- The plant is operating on CTE/ CTO of Jharkhand State Pollution Control Board (JSPCB) as the project did not attract any conditions as per the EIA Notification, 2006. The existing project was accorded with Consent to Establish (CTE) vide letter no. 2822 dated 06.05.2003 from JSPCB for production of 45TPD MS Ingots. Thereafter, company enhanced its production of MS Ingots from 45TPD to 90TPD after obtaining another CTE vide memo no. LN-329 dated 07.12.2010 from JSPCB. CTE was obtained from JSPCB vide lt. no. JSPCB/HO/RNC/CTE-8777503/2020/386 dt. 06.10.2020 for installation of Slag Crusher for capacity 9,000 TPA. Previously, unit is having CTO dated 12th September 2019 from JSPCB vide lt. no. JSPCB/HO/RNC/CTO-5657700/2019/1801, valid till 30th June 2024. At present company is having valid CTO dated 13.08.2024 from JSPCB, valid till 30.06.2025.
- The unit configuration and capacity of existing and proposed project is given as below. The working days after proposed expansion will be 330 days.

Sl. No	Plant Facilities	Existing Configuration		Proposed Configuration		Final Production Capacity (TPA)	
		Unit	Capacity	Unit	Capacity	Unit	Capacity
1.	Induction Furnace	2x4T	27,000 TPA MS Ingot	3x15T IF (*replacement of Existing 2x4T Furnace with 2x15T & Addition of 1x15T Furnace*) along with 1x15T LRF	148,500 TPA MS Ingot/Billets	3x15T IF along with 1x15T LRF	MS Ingot/Billets 148,500 TPA
	Continuous Casting	--	--	1 x 2 strand Rad – 4/7 m		1 x 2 strand	

Sl. No	Plant Facilities	Existing Configuration		Proposed Configuration		Final Production Capacity (TPA)	
		Unit	Capacity	Unit	Capacity	Unit	Capacity
	Machine					Rad – 4/7 m	
2.	Reheating Furnace *(emergency use)*	--	--	1x30 TPH	99,000 TPA	1x30TPH	99,000 TPA
3.	Rolling Mill *(Direct Hot Charging)*	--	--	1x25TPH	145,500 TPA Rolled Products (TMT Bars, Structural, etc.)	1x25TPH	145,500 TPA Rolled Products (TMT Bars, Structural, etc.)
4.	Slag Crusher	1x3 TPH	9000 TPA Max.	Capacity enhancement of Slag Crusher 1x10TPH	24,000 TPA Max.	1x10TPH	33,000 TPA Max.

- The details of the raw material requirement for the proposed expansion project along with its source and mode of transportation is given as below:

Sl. No.	Item	Existing Requirement in TPA	Proposed Requirement in TPA	Total Requirement in TPA	Source	Distance & Mode of Transport
STEEL MELTING SHOP –(MS Ingot/Billets 148,500 TPA)						
1.	Sponge Iron	21,600	97,200	1,18,800	GM Iron & Steel Pvt Ltd, Jamshedpur, Shiv Metallics Pvt Ltd, Rourkela	40 to 120 km By Road
2.	Pig Iron	8,100	36,450	44,550	Balmukund Sponge Iron Pvt Ltd, Giridih Atibir Industries Co. Ltd, Giridih	
3.	Scrap	4,050	18,225	22,275	Dhanbad	

Sl. No.	Item	Existing Requirement in TPA	Proposed Requirement in TPA	Total Requirement in TPA	Source	Distance & Mode of Transport
4.	Ferro-alloys	54	243	297	Maithan Alloys Ltd, Paschim Burdwan, Castron Technologies, Bokaro	
Total		**33,804**	**152,118**	**185922**		
ROLLING MILL –145,500TPA Rolled Products (TMT Bar, Structural, etc.)						
1.	Hot MS Ingot/Billets	--	148,500	148,500	In house	--
REHEATING FURNACE- 1x30TPH (emergency & startup use)						
1.	Coal/ Furnace Oil	--	11088 TPA/ 3300 KL	11088 TPA/ 3300 KL	Dhanbad/ Local Area	Within 10kms

- The total make-up water requirement of the plant after proposed expansion is estimated to be 190KLD. The company has obtained CGWA NOC vide lt. no. CGWA/NOC/IND/REN /1/2024/9573 dated 30.05.2024 for abstraction of 190KLD of ground water and is valid till 31.05.2027. The plant will be operated on ZLD.
- Total requirement of power for the after proposed expansion will be 22.0MVA. Existing requirement of power for the operation of existing units is 3.0MVA and requirement is met through DVC. Permission for the additional power requirement shall be obtained from DVC. One DG set of 250 KVA will be installed along with the existing DG set of 250 KVA.
- Baseline Environmental Studies: 1st March, 2023 to 31st May, 2023.

Parameters	Description	Permissible Level
AAQ parameters at 8 Locations (Average – min and max)	PM2.5 27.5 to 57.3 µg/m3 PM10 51.2 to 82.5 µg/m3 SO2 9.2 to 25.6 µg/m^3 NO2 15.0 to 39.1 µg/m^3 CO 0.50 to 1.20 mg/m^3	60 µg/ m^3 100 µg/ m^3 80 µg/ m^3 80 µg/ m^3 04 mg/m^3
Ground Water Quality	Ph varies from to 7.40 to 7.69 Total Hardness varies from 514.00 to 564.00 mg/l Total Dissolved Solids varies from 678.00 to 822 mg/l.	6.5-8.5 200-600 mg/L 500-2000 mg/L
Surface Water Quality	Ph varies from 7.48 to 7.72 Dissolved Oxygen varies from 5.8 to 6.3 mg/l. BOD varies from 16.0 to 36.0 mg/l.	IS:2296 Class C Norms
Soil Quality	Ph 7.52 to 7.76 Potassium K 34.35 to 45.20 kg/ha Available nitrogen N 138.25 to 173.00 (Kg/hec) Organic matter 0.30% to 0.48%	----

<table>
<tr><th>Parameters</th><th>Description</th><th>Permissible Level</th></tr>
<tr><td rowspan="2">Noise Level</td><td>Day Time (6:00 a.m. to 10:00 p.m.) 64.36 Leq Db(A)
Night Time (10:00 p.m. to 6:00 a.m.) 57.76 Leq Db(A)</td><td>Industrial Zone
75 Leq Db (A)
to 70 Leq Db (A)</td></tr>
<tr><td>Day Time (6:00 a.m. to 10:00 p.m.) 49.50 Leq Db(A) and 54.52 Leq Db(A)
Night Time (10:00 p.m. to 6:00 a.m.) 40.22 Leq Db(A) and 44.20 Leq Db(A)</td><td>Residential Zone
55 Leq Db (A)
to 45 Leq Db (A)</td></tr>
<tr><td>Traffic assessment study findings</td><td>

The traffic study was carried at NH-19 located at distance of 0.27km from project site.
Transportation of Raw material, Fuel and Finished product will be done by Road.
Existing PCU is 3558.5 PCU/Day on NH-19 existing level of service (LOS) is:

<table>
<tr><th>Road</th><th>V (Volume in PCU/day)</th><th>C (Capacity in PCU/day)</th><th>Existing V/C Ratio</th><th>LOS</th></tr>
<tr><td>NH-19</td><td>3558.5</td><td>15000</td><td>0.24</td><td>B</td></tr>
</table>

PCU load after proposed expansion project will be 3667.5 PCU/Day (Existing 3558.5 + 109) for NH-19. Level of service (LOS) will be after expansion will remain 'B'

<table>
<tr><th>Road</th><th>V (Volume in PCU/day)</th><th>C (Capacity in PCU/day)</th><th>V/C Ratio</th><th>LOS</th></tr>
<tr><td>NH-19</td><td>3667.5</td><td>15000</td><td>0.24</td><td>B</td></tr>
</table>
Conclusion: Level of Service will be "B" i.e. Very Good for NH-19 including additional traffic due to proposed project.
Note: Capacity as per IRC 64:1990 Guideline for capacity for roads in Rural Areas.
</td><td></td></tr>
<tr><td>Flora and fauna</td><td>The Schedule – I fauna as per reconnaissance survey are animals like Herpestes edwardsi, Hystrix indica, Manis crassicaudata, Python molurus, Varanus bengalensis, Pavo cristatus, and Gyps bengalensis. Felis chaus, Canis aureus, Hyaena hyaena, Vulpus benghalensis, Manis crassicaudata. Reptiles like Python molurus, Naja naja</td><td>--</td></tr>
</table>

Parameters	Description	Permissible Level
	&Varanus bengalensis. Birds like Spilornischeela, Gyps bengalensis, Bubo bubo & Pavocristatus. Wildlife conservation plan for the conservation of Schedule- I Species is prepared and submitted to DFO cum wildlife warden of the region dated 17.08.2024. The budget of Wildlife conservation plan is kept as 135.75 Lakhs for 10 years.	

- The details of solid and hazardous waste generation along with its mode of treatment/disposal is furnished as below

Units	Solid Wastes	Qty In TPA	Disposal practice
Induction Furnace	Slag	29,700	After metal extraction (121Approx. 10% of slag), it will be supplied to outside parties for construction filling.
CCM	End cuts/ Scales	1,485	Recycled in-house along with scrap in the induction furnace.
Rolling Mill	End cuttings & Mill Scale	2750	Supplied to outside parties for construction filling
Bag Filter Dust from process	Dust from process	297	Supplied outside for further reuse in construction work and Low land filling
Re-heating furnace (if operated with coal @100%)	Ash	3880 (Max)	Provided to nearby ash bricks / blocks Manufacturers

- Socio-Economic Survey during the Study Period

Points Discussed during the Socio-Economic Survey	Opinion and Expectations
Issues Discussed: • The Project Background, Environmental, Social issue and benefit from the project were explained to the Stakeholders. • The Main issue of villagers during public consultation was discussed. • Perceptions of the villagers were discussed • Expectations of the respondent	• Villagers are of Rajpura, Egarkunr, Mugma opined that the project will create positive development in the area by providing employment opportunities and also the activities under CSR will be implemented by the project. • Most of the respondents expected drinking water facility should be improved in the area as there is major issue of drinking water supply. • Most of the villagers opined that is Inadequate sanitation and drainage system in Egarkunr, Rajpura, Mugma, Marma and Chirkunda areas, they are expecting that there must be proper drainage

Points Discussed during the Socio-Economic Survey	Opinion and Expectations
from the project proponent were discussed to know their priority needs and requirements	system to be constructed in the villages. • Villagers are expecting the maintenance of School Infrastructure in Magma, Nirsa Public School and other government school in the villages within the core area. Sports equipments should be provided in the schools in the village. • Villagers are expecting that project authority should improve Health facility in villages. Provision of doctors and medical shops and chemist must be provided in Community health centre in Nirsa. • Villagers opined that the proposed project may increase the pollution level in the region so project proponent must adapt necessary measures to mitigate the environmental impacts

- **Public Consultation**

Details of advertisement given	"Hindustan Times" and "Times of India" on dated 13.12.2023
Date of public consultation	15.01.2024
Venue	Dakbanglow, Mugma more, PO- Mugma, Dist- Dhanbad, Jharkhand.
Presiding Officer	Shri Satish Chandra, Land Reforms Deputy Collector
Major issues raised	The issues raised in the public hearing were for employment to be given to local people, repair the damages in Jagrati High School, water shortage problem in the village.

- **Action plan as per MoEF&CC O.M. dated 30/09/2020**

Sl. No.	Activities	Year of Implementation (Budget in INR)			Total Expenditure (Rs.)
		1st Year	2nd Year	3rd Year	
1.	**Provision of Drinking Water:** Plant will be installing Two (2) nos. of Mark-2 Hand Pumps (Boring + Casing + Piping + Hand-pump + Cement Platform and drain with overflow pit) at different location in Village Madanpur	2,50,000	0	0	2,50,000

Sl. No.	Activities	Year of Implementation (Budget in INR)			Total Expenditure (Rs.)
		1st Year	2nd Year	3rd Year	
2.	**Renovation of Jagrati High School:** Renovation of Jagrati High School by maintenance of existing classrooms, provision of green boards, construction of one pair of toilets for boys & girls with common septic tank, construction of one number of RWH Pits, installation of one number water cooler with RO for drinking water, installation of playing slides & swings for students	0	30,00,000	0	30,00,000
3.	**Skill Development Camps for women:** Organization of Skill development camps for women empowerment in village and will be trained for making cotton hand gloves, sanitary pads etc. Company will also distribute 30 Nos. of Sewing Machine to women of the village.	5,00,000	5,00,000	5,00,000	15,00,000
	Provision of Ambulance: Provision of 2 numbers of ambulance to Gram Panchayat, with life supporting facilities i.e. Oxygen supply unit with necessary accessories and Nebulizer along with stretchers. Company will be taking care of day to day operations and medical stocks refillment along with maintenance of Ambulance.			20,00,000	20,00,000
	Organizing Health Check-up Camp: Organizing Health Camps	2,50,000	2,50,000	2,50,000	7,50,000

Sl. No.	Activities	Year of Implementation (Budget in INR)			Total Expenditure (Rs.)
		1st Year	2nd Year	3rd Year	
	Check-up, Blood Donation Camps, Free Eye Operation Camps, Wheel Chairs for the people with disabilities and mobility issues for Egarkunr				
Total		**10,00,000**	**37,50,000**	**27,50,000**	**75,00,000**

- The Additional Activities based on Socio-economic survey like supply of drinking water tankers during summer to nearby villages, Drainage repair of nearby villages, Sports facilities in schools of nearby villages, Greenbelt development along the boundary of nearby villages will be undertaken under CSR as per Norms. All other points are covered under CER activity as per table above.
- Existing Capital cost of project was Rs. 3.64 Crore. The cost of the proposed project is envisaged as Rs. 44.50 Crore. Thus, total cost of project will be 48.14 Crore. The capital cost for environmental protection measures (EMP) is proposed as Rs. 2.46 Crore. The annual recurring cost towards the environmental protection measures is proposed as Rs 24.94 Lakhs.
- The employment generation from the proposed expansion is 133.
- The details of cost for environmental protection measures are as follows:

Sl. No.	Environmental Protection Measures	Capital Cost Rs. In lakhs	Recurring Cost Rs. In lakhs/year
1	***Air Pollution Control Measures***		
	Augmentation of existing Spark Arrester with Bag Filter system and its connection to 2x15T Induction Furnaces	8.0	0.8
	1 no. of Spark Arrester with Pulse jet Bag Filter with proposed 1x15T Induction Furnace and 1x15T LRF	30.0	3.0
	Bag Filter with Reheating Furnaces	15.0	0.15
	Fume Extraction System	1.5	0.15
	Dust Suppression system in Slag Crusher	1.5	0.15
	Sprinkler at different locations in plant	2.5	0.25
	Sub Total (1)	**58.5**	**4.5**
2	***Water Pollution Control Measures***		
	Augmentation of Neutralization Pit (1 Nos. of 15 KL)	5.0	0.20
	Settling tank with oil skimmer	3.0	0.30
	Sub Total (2)	**8.0**	**0.50**
3.	***Noise Pollution Control Measures***		
	Acoustic Enclosure or Separate housing for DG Set and Compressor	10.0	1.0
	Sub Total (3)	**10.0**	**1.0**

Sl. No.	Environmental Protection Measures	Capital Cost Rs. In lakhs	Recurring Cost Rs. In lakhs/year
4.	***Storage and Solid Waste Management***		
	RCC flooring for storage raw materials and storage of Bag filter Dust, to avoid leaching	5.0	0.5
	Concrete platform with bund wall and oil collection system for storage of HSD, and other Oil Drums and Used Oil	2.0	0.2
	Sub Total (4)	**7.0**	**0.70**
5.	***Environment Monitoring Program***	**65.0**	**9.49**
6.	***Occupational Health & Safety***	**11.0**	**6.5**
7.	***Greenbelt Development***	**9.11**	**2.1**
8.	***Rainwater Harvesting System***	**3.0**	**0.15**
	Sub-Total	***171.61***	***24.94***
9.	**Budget for implementation of commitments made to address the issues raised during the public hearing**	**75.0**	-
	Grand-Total	**246.61**	**24.94**

- The plant has already developed greenbelt in 0.301Ha (0.743Acres) i.e. 15% of the total plant area. Since, there is no adequate land area for the development of 33% of the greenbelt within the existing plant premises. In order to achieve 33% greenbelt the company has acquired 0.55Ha. (1.375 Acres) in Mouza Simuldanga, Mauza No,48, PS, - Nirsa , Dist- Dhanbad at 2.84 km distance from the project boundary for development of additional 15% greenbelt. The total plantation of 0.857 Ha. will be approx. 42.78% of the plant area and 33.35% of the combined project activity area of 2.57 Ha. (2.02 Ha. + 0.55 Ha.). Total of 2128 trees will be planted in the combined area. Capital budget of Rs. 9.09 lakhs will be spent on tree plantation and the budget of approx. Rs. 2.1 lakhs shall be kept for yearly maintenance.
- The Self Certified CTO Compliance dated 20.08.2024 is submitted. Since, the Valid CTO was recently obtained on 13.08.2024 therefore MoEFCC OM dated 08.06.2022 we have submitted the Self Certified CTO Compliance. There were no Non Compliance reported.
- There is no violation under EIA, 2006/court case/show cause/direction if any, related to the project under consideration.
- Name of the EIA consultant: Vardan EnviroNet LLP [S.No. 198 in List of ACOs with their Certificate/Extension Letter no. NABET/EIA/2326/RA0284-Rev.01 Valid up to April 04.05.2026]

STATUTORY CLEARANCES :

1	Land docs	:	Land deed (M/s Kumardhubi Steels Pvt. Ltd.)
2	CO	:	The CO, Nirsa (Dhanbad) vide letter no. 77, dated 25.01.2020 and CO, Agyarkund (Dhanbad) vide letter no. 903, dated 13.07.2023 have mentioned the plot no. of the project is not

			recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DFO Wild Life	:	DFO, Wildlife Hazaribag vide letter no. 237, dated 01.02.2020 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
4	DFO Territorial	:	DFO, Dhanbad Forest Division vide letter no. 373, dated 18.02.2020 certified that the distance of reserved / protected forest is 2000 meters from project site.
5	No Objection Certificate/ Consent to Establish		**NOC/ CTE** issued by JSPCB vide : i. Ref. no. : 2822, dated 06.05.2003. ii. Memo no. : LN-329, dated 07.12.2010.
6	Consent to Establish (CTE)	:	**CTE** issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-8777503/2020/386, dated 06.10.2020.
7	Consent to Operate (CTO)	:	**CTO** issued by JSPCB vide Ref. no. : i. JSPCB/HO/RNC/CTO-5657700/2019/1801, dated 12.09.2019. ii. JSPCB/HO/RNC/CTO-13168641/2022/957, dated 04.07.2022. iii. JSPCB/HO/RNC/CTO-19633585/2024/1307, dated 13.08.2024.
8	Compliance report of CTO	:	i. Compliance report of previous CTO conditions certified by JSPCB, Regional Office, Dhanbad vide memo no. 1176, dated 12.06.2024. ii. Self certified compliance report of the current CTO has been submitted.
9	CGWA	:	No Objection Certificate (NOC) for Ground Water Abstraction vide NOC no. CGWA/NOC/IND/ORIG/2021/12409, dated 01.06.2021 (valid up to 31.05.2024)
10	Public Hearing	:	Public Hearing conducted on 15.01.2024.
11	Baseline Study Period	:	1st March 2023 to 31st May 2023.

Based on the presentation made and information provided, the Committee decided that the proposal for Expansion of existing 27000 TPA M.S. Ingot unit to 1,48,500 TPA MS Ingot / Billets by installing 3x15 T (by replacement of existing 2x4 T Furnace with 2x15 T & Addition of 1x15 T IF) along with CCM- 1x2 strand, 4/7 m radius, enhancement of slag crusher capacity from 9000 TPA to 33,000 TPA and production of 1,45,500 TPA Rolled Products (TMT Bars / Structural / etc) by installing 1x25 TPH Rolling Mill along with 1x30 TPH capacity reheating furnace (for emergency use) by M/s Kumardhubi Steels Pvt. Ltd., Village

: Rajpura, P.O. : Kumardhubi, Distt. : Dhanbad, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – IV alongwith following specific conditions :

I. The proposed reheating furnace shall be used only in emergency situation.

II. Maximum quantity of Rain Water Harvested shall be used within the plant permises and only surplus RWH water shall be recharged to ground.

III. No effluent to be discharged out side the plant premises.

IV. The Wildlife Conservation Plan has been submitted to DFO, Dhanbad vide letter dated 17.08.2024. Approved copy of Wildlife Conservation Plan shall be submitted to SEIAA/SEAC within 06 months of the grant of EC.

V. 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).

VI. MoU is to be executed with the buyers of the use refractory material before this expansion project comes into operation. Copy of MoU to be submitted SEIAA / SEAC, Jharkhand before expansion project comes into operation.

VII. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.

VIII. 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.

IX. All raw material to be stored only under covered shed.

X. 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.

XI. Trees should be developed & maintained not less than 33% of project area.

XII. Developers/Company to install ETP and / or STP of sufficient capacity such that all the waste water produced is treated and reused.

XIII. 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.

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

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. Suitable plants 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.

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2. **Expansion & Modernization project for enhancement in the production capacity of TMT Bar in coils & MS Rods from 21,349 TPA to 237,600 TPA through modernization of its existing Re-Rolling Mill from 9 TPH to 50 TPH capacity along with replacement of existing 1x10 TPH Reheating Furnace by 1x30 TPH Reheating furnace and production of 148,500 TPA MS Billets by replacing the existing (2x8T & 1x6T) Induction Furnace by 3x15T induction Furnace along with installation of new 3x2 strand CCM and modernization of existing slag crusher from 5 TPH to 10 TPH capacity by M/s Atibir Hi-Tech Private Limited, Village : Mohanpur, Tehsil : Giridih, Distt. : Giridih, Jharkhand.**

(Proposal No. : SIA/JH/IND1/ 492673/ 2024).

Name of the consultant : Vardan Environet, Haryana.

This is an expansion project which has been taken for appraisal on 24.08.2024.

Project Category : 3 (a) Metallurgical Industries (Ferrous & Non-Ferrous) as per EIA Notification, 2006.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 92nd meeting held on 20-23.10.2021 and SEIAA, Jharkhand has approved the ToRs in 93rd meeting held on 26th, 27th & 28th October, 2021. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2021-22/2437/2021/199, dated 30.10.2021. The final EIA / EMP submitted by PP to SEAC on 20.08.2024.

The project is for obtaining environmental clearance for Expansion & Modernization project for enhancement in the production capacity of TMT Bar in coils & MS Rods from 21,349 TPA to 237,600 TPA through modernization of its existing Re-Rolling Mill from 9 TPH to 50 TPH capacity along with replacement of existing 1x10 TPH Reheating Furnace by 1x30 TPH Reheating furnace and production of 148,500 TPA MS Billets by replacing the existing (2x8T & 1x6T) Induction Furnace by 3x15T induction Furnace along with installation of new 3x2 strand CCM and modernization of existing slag crusher from 5 TPH to 10 TPH capacity by M/s Atibir Hi-Tech Private Limited at Village- Mohanpur, PO- Udnabad, District- Giridih, State- Jharkhand, within the existing plant premises of 4.2Ha.

Environmental Site Settings:

S. No.	Particulars	Details	Remarks
1	Total land	4.2ha [Industrial: 4.2ha]	Land Use: Industrial Land
2	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	Total area – 4.2 Ha [Acquired Land: 4.2 Ha,]	No additional land acquisition Required.
3	Existence of habitation & involvement of R&R, if any.	R&R is not applicable **Existence of Habitation** Project Site – Nil Study Area: Nearest	--

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td></td><td></td><td><table><tr><th>Habitation</th><th>Distance</th><th>Direction</th></tr><tr><td>Mohanpur</td><td>0.20km</td><td>NW</td></tr></table></td><td></td></tr>
<tr><td>4</td><td>Latitude and Longitude of all corners of the project site4</td><td><table><tr><th>Corner</th><th>Latitude</th><th>Longitude</th></tr><tr><td>A</td><td>24° 8'12.32"N</td><td>86°21'14.44"E</td></tr><tr><td>B</td><td>24° 8'9.98"N</td><td>86°21'13.50"E</td></tr><tr><td>C</td><td>24° 8'8.58"N</td><td>86°21'13.25"E</td></tr><tr><td>D</td><td>24° 8'6.13"N</td><td>86°21'17.46"E</td></tr><tr><td>E</td><td>24° 8'4.48"N</td><td>86°21'23.16"E</td></tr><tr><td>F</td><td>24° 8'6.05"N</td><td>86°21'21.30"E</td></tr><tr><td>G</td><td>24° 8'6.63"N</td><td>86°21'23.16"E</td></tr><tr><td>H</td><td>24° 8'7.42"N</td><td>86°21'22.85"E</td></tr><tr><td>I</td><td>24° 8'8.22"N</td><td>86°21'23.34"E</td></tr><tr><td>J</td><td>24° 8'9.14"N</td><td>86°21'23.67"E</td></tr><tr><td>K</td><td>24° 8'10.06"N</td><td>86°21'20.94"E</td></tr><tr><td>L</td><td>24° 8'11.26"N</td><td>86°21'21.15"E</td></tr><tr><td>M</td><td>24° 8'11.19"N</td><td>86°21'19.44"E</td></tr></table></td><td>--</td></tr>
<tr><td>5</td><td>Elevation of the project site</td><td>281 m above mean sea level</td><td>--</td></tr>
<tr><td>6</td><td>Involvement of Forest land, if any</td><td>No involvement of Forest Land</td><td>--</td></tr>
<tr><td>7</td><td>Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area</td><td>Project Site: No water bodies within the project site.
Study area<table><tr><th>Water Body</th><th>Distance</th><th>Direction</th></tr><tr><td>Usri River</td><td>1.58km</td><td>East</td></tr><tr><td>Kako river</td><td>8.76km</td><td>WNW</td></tr><tr><td>Barakar river</td><td>8.98km</td><td>South</td></tr></table></td><td>--</td></tr>
<tr><td>8</td><td>Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve etc. if any within the study area</td><td>No ESZ/ ESA/ National Park/ Wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve within 10km radius of the project site. Few Protected Forest in 10km Study Area.
Jhalakdiha PF is at 0.25km in SE direction
Mahuatanr PF is at 0.59km in South direction
Birangadda PF is at 1.61km in NNE direction
Gangapur PF is at 2.40km in SE direction</td><td>--</td></tr>
</table>

Land Details :

Khata no.	Plot no.
68	1526, 1527, 1528, 1529, 1532, 1533 & 1536
27	1552
57	1554
51	1553
78	1551
55	1550
73	1555
109	1524
49	1546
32	1549
75	1556
12	1547
47	1467
41	1463, 1464
85	1459
72	1557
88	1548
109	1524
89	1523

- Company started with establishment of Rolling Mill of capacity 15TPD after obtaining NOC from Bihar State Pollution Control Board (BSPCB) dated on 21.01.1997. Another NOC was obtained by the company from BSPCB vide Ref. No. T 4512, dated 23.10.2000 for expansion of rolling capacity to 35TPD and vide Ref. No. T-4513, dated 23.10.2000 for 200TPD MS Ingots production through 2x8T & 1x6T Induction Furnace along with 1x5TPH slag crusher unit. Later company has obtained CTE from Jharkhand State Pollution Control Board (JSPCB) vide Ref. No. D- 1337(N), dated 29.05.2015 for marking the production capacity of 21,349 TPA MS Bars in coil and MS Rods through 1x9 TPH capacity Re-Rolling mill along with 1x10 TPH Reheating Furnace.
- Consent to Operate (CTO) for production of 21,349 TPA TMT Bar in coils & MS Rods and of 200 TPD MS Ingots vide ref No. JSPCB/HO/RNC/CTO-9102932/2021/770, dated 12.06.2021 for the period up to 31.03.2026.
- The unit configuration and capacity of existing and proposed project is given as below. The Total working days after proposed expansion will be 330 days.

Sl. No	Plant Facilities	Existing Configuration	Proposed Configuration	Final Production Capacity (TPA)
1.	Induction Furnace	60,000 TPA MS Ingots (2x8T & 1x6T)	148,500 TPA MS Billets (3x15T)	MS Billets 148,500 TPA

Sl. No	Plant Facilities	Existing Configuration	Proposed Configuration	Final Production Capacity (TPA)
		Will be replaced		
2.	Continuous Casting Machine	-	3 x 2 strand (for 148,500 TPA)	3x2 strand
2.	Rolling Mill	21,349 TPA (1x9TPH) Will be modernized	237,600 TPA (1x50TPH)	Roll Products (TMT Bars/Rods etc.) 237,600 TPA
3.	Re-heating Furnace	1x 10 TPH (max, 22,500 TPA) Will be replaced	1x30 TPH (max. 99,000 TPA)	Re-heated billets (for rolling) 99,000 TPA
4.	Slag Crusher	1x5 TPH (max. 16,500 TPA)	1x10TPH (max.33,000 TPA)	Crushed Slag 33,000 TPA

- The details of the raw material requirement for the proposed expansion project along with its source and mode of transportation is given as below:

Sl. No.	Item	Existing Requirement in TPA	Proposed Requirement in TPA	Total Requirement in TPA	Source	Distance & Mode of Transport
STEEL MELTING SHOP –(MS Billets 148,500 TPA)						
1.	Sponge Iron	48,000	70,800	118,800	Local Plant in Hazaribagh, Ramgarh, Giridih, etc	40 to 120 km By Road
2.	Pig Iron	18,000	26,550	44,550		
3.	Scrap	9000	13,275	22,275		
4.	Ferro-alloys	120	177	297		
Total		**75120**	**110802**	**185,922**		
ROLLING MILL – (Long Rolled Product 237,600TPA)						
1.	MS Billets	61,200	181,152	242,352	148500 TPA, In-house – Hot Billets direct charging & rest 93852 TPA from nearby Steel Plants	--
2.	Coal/Furnace Oil for re-heating furnace	4200	2380	6580 TPA or 3300 KL per year	Giridih/ open market	--

- The total make-up water requirement of the plant after proposed expansion is estimated to be 290KLD. The Company has obtained CGWA permission vide NOC no. CGWA/NOC/IND/ORIG/2022/15791 dated 23.05.2022 valid till 22/05/2025. The plant is operated on ZLD.
- Total requirement of power for the after proposed expansion will be 15.0MVA. Existing requirement of power for the operation of existing units is 9.5MVA and requirement is met through DVC. Permission for the additional power requirement shall be obtained from DVC. One DG set of 1x1000 kVA will be augmented along with the existing DG set of 1x500 kVA.
- Baseline Environmental Studies: 1st October 2021 to 31st December 2021.

Parameters	Description	Permissible Level
AAQ parameters at 8 Locations (Average - min and max)	PM2.5 31.5 to 54.8 µg/m^3 PM10 48.5 to 84.4 µg/m^3 SO2 6.8 to 22.3 µg/m^3 NO2 11.4 to 36.5 µg/m^3 CO 0.5 to 1.0 mg/m^3	60 µg/ m^3 100 µg/ m^3 80 µg/ m^3 80 µg/ m^3 04 mg/m^3
Ground Water Quality	pH varies from to 7.76 to 7.49 Total Hardness varies from 179 to 271 mg/L. Total Dissolved Solids varies from 374 to 487 mg/L.	6.5-8.5 200-600 mg/L 500-2000 mg/L
Surface Water Quality	pH varies from to 7.57 to 7.80 Dissolved Oxygen varies from 5.3 to 6.7 mg/L. BOD varies from 9.86 to 14.00 mg/L.	IS:2296 Class C Norms
Soil Quality	pH 7.59 to 7.77 Potassium K 90.25 to 177.0 kg/ha Available nitrogen N 186.11 to 233.15 (Kg/hec) Organic matter 0.50% to 0.73%	----
Noise Level	Day Time (6:00 a.m. to 10:00 p.m.) 67.95 dB(A) Night Time (10:00 p.m. to 6:00 a.m.) 61.76 dB(A)	Industrial Zone 75 Leq dB (A) to 70 Leq dB (A)
	Day Time (6:00 a.m. to 10:00 p.m.) 49.35 to 53.76 dB(A) Night Time (10:00 p.m. to 6:00 a.m.) 39.94 to 43.66 dB(A)	Residential Zone 55 Leq dB (A) to 45 Leq dB (A)
Traffic assessment study findings	• The traffic study was carried at SH-13 (Koderma - Giridih – Tundi – Govindpur Marg) located at road distance of 160m from project site. • Transportation of Raw material, Fuel and Finished product will be done by Road. • Existing PCU is 3881.5 PCU/Day on SH-13 existing	

<table>
<tr><th>Parameters</th><th>Description</th><th>Permissible Level</th></tr>
<tr><td></td><td>level of service (LOS) is:
<table>
<tr><th>Road</th><th>V (Volume in PCU/day)</th><th>C (Capacity in PCU/day)</th><th>Existing V/C Ratio</th><th>LOS</th></tr>
<tr><td>SH-13</td><td>3881.5</td><td>15000</td><td>0.26</td><td>B</td></tr>
</table>
• PCU load after proposed expansion project will be 4013.5 PCU/Day (Existing 3881.5 + 132) for SH-13. Level of service (LOS) will be after expansion will remain 'B'
<table>
<tr><th>Road</th><th>V (Volume in PCU/day)</th><th>C (Capacity in PCU/day)</th><th>V/C Ratio</th><th>LOS</th></tr>
<tr><td>SH-13</td><td>4013.5</td><td>15000</td><td>0.27</td><td>B</td></tr>
</table>
Conclusion: Level of Service will be "B" i.e. Very Good for SH-13 including additional traffic due to proposed project.
Note: Capacity as per IRC 64:1990 Guideline for capacity for roads in Rural Areas.</td><td></td></tr>
<tr><td>Flora and fauna</td><td>As per reconnaissance survey Schedule - I fauna species found within 10km of the study area. Total 21 Schedules-I faunal species like Herpestesedwardsi, Hystrix indica, Manis crassicaudata, Python molurus, Varanus bengalensis, Pavocristatus, and Gyps bengalensis. Felis chaus, Canis aureus, Hyaena hyaena, Vulpusbenghalensis. Reptiles like Python molurus, Najanaja& Varanus bengalensis. Birds like Spilornischeela, Gyps bengalensis, Bubo bubo & Pavocristatus have been reported in the 10 km of the study area. The detailed study is given in Final EIA/EMP report. Total 21 numbers Schedule-1 species have been identified/reported is in the study area. Wildlife conservation plan has been prepared and submitted to DFO cum Wildlife Warden on dated 06.08.2024. The budget of Wildlife conservation plan is kept as 125.63 Lakhs for 10 years.</td><td>--</td></tr>
</table>

- The details of solid and hazardous waste generation along with its mode of treatment/disposal is furnished as below

Units	Solid Wastes	Qty In TPA	Disposal practice
Induction Furnace	Slag	31185	After metal extraction (approx. 12%of slag), in In House Slag crusher, will be supplied to outside parties for construction filling.
Rolling Mill	Mill Scale & cuttings	4752	Will be charged back as scrap in the induction furnace for In-House Reuse.
Bag Filter Dust from process	Dust from process	222	Supplied to outside parties for construction filling
Re-heating furnace	Ash & Bag filter dust	1815*	Supplied to fly ash block manufacturers. *No generation if furnace oil is used.

- **Socio Economic Survey during Study period**

Points Discussed with villagers during Socio Economic	Opinion and Expectations
Issues Discussed: • The Project Background, Environmental, Social issue and benefit from the project were explained to the Stakeholders. • The Main issue of villagers during public consultation was discussed. • Perceptions of the villagers were discussed • Expectations of the respondent from the project proponent were discussed to know their priority needs and requirements	• Most of the respondents are aware about the project but they are not aware about the expansion project • Villagers from Jhalakdiha and Chatro village are expecting that the project proponent should organize Health camp for the villagers from time to time • Pollution control measures should be adopted to reduce the pollution level in the areas • Educational and skill development trainings to be provided for the villagers • Toilet shall be constructed in schools of the village • Most of the respondents from Birangadda, Mohanpur and Mathadih village are expecting that the job opportunities may be increase due to project work mainly during construction work • As the main problem faced by most of the villagers is scarcity of water, they are expecting that water facility should be provided to them; also, proponent must help in repairing and maintenance of hand pump • Villagers of Mohanpur and Baniadih villages responded that the condition of the approach road to the village is very poor.

Points Discussed with villagers during Socio Economic	Opinion and Expectations
	• Villagers opined that the proposed expansion project may increase the traffic level in the area. So, project proponent must adapt necessary measures to mitigate the traffic congestion in the area

- **Public Consultation**

Details of advertisement given	"Hindustan Times", "Prabhat Khabar", "Punh Prabhat Khabar" and "Dainik Bhaskar" on dated 25.01.2024
Date of public consultation	08.02.2024
Venue	Pawan Chudiwala, Tundi Road, Harsinghraidih, Police Station District - Giridih
Presiding Officer	Shri Ghulam Samdani, District Supply Officer (Additional Collector)
Major issues raised	The issues raised in the public hearing were for employment to be given to local people, Pollution control equipment installation, Scarcity of drinking water, Welfare of local public and Health Care facilities in village.

- **Action plan as per MoEF&CC O.M. dated 30/09/2020**

Sl. No.	Activities	Year of Implementation (Budget in INR)			Total Expenditure (Rs.)
		1st Year	2nd Year	3rd Year	
1.	**Medical Facility:** Eye operation camps, blood donation camps, free medical checkup camps, wheel chair cycles for people with disabilities and mobility issues. Beds for Health Care centre in Damodarpur village	6,00,000	3,00,000	--	9,00,000
2.	**Plantation:** Plantation work of 1000 m length and 10 m wide on boundary of Mohanpur village.	--	5,00,000	5,00,000	10,00,000

Sl. No.	Activities	Year of Implementation (Budget in INR)			Total Expenditure (Rs.)
		1st Year	2nd Year	3rd Year	
	Fencing and Gap plantation in place of non-surviving trees				
3.	**Pond Renovation:** Renovation of Pond (Koiri pokhar) located in Udnabad Village	5,00,000	--	--	5,00,000
Total		**11,00,000**	**8,00,000**	**5,00,000**	**24,00,000**

- The Additional Activities based on Socio-economic survey like supply of drinking water tankers during summer to nearby villages, Approach road repair for nearby villages, Greenbelt development along the boundary of nearby villages will be undertaken under CSR as per Norms. All other points are covered under CER activity as per table above
- Existing Capital cost of project was Rs. 16.58 Crore. The capital cost of the proposed project is envisaged as Rs. 34.91 Crores and the capital cost for environmental protection measures (EMP) is proposed as Rs. 2.562Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 46.12Lakhs.
- The employment generation from the proposed expansion is 224.
- The details of cost for environmental protection measures are as follows:

Sl. No.	Environmental Protection Measures	Capital Cost Rs. In lakhs	Recurring Cost Rs. In lakhs/year
A	**Air Pollution Measures**		
	Installation of 2 Nos. of Spark Arrester with Pulse jet Bag Filter with induction furnaces and Cyclone Separator with Pulse jet Bag Filter with reheating furnace	35	3.5
	Water sprinklers (6 Nos.)	1.5	0.2
	Dust Suppression System	1.5	0.2
	Sub Total (A) Air Pollution Control Measures	**38.0**	**3.9**
B	**Water Pollution Control Measures and Rainwater Harvesting**		
	Augmentation of Neutralization Pit (1 Nos. of 15 KL)	5.0	0.2

	Settling tank with oil skimmer	2.0	0.2
	STP (1 Nos. of 15 KLD)	5.0	0.5
	Sub Total (B) Water Pollution Control Measures	**12.0**	**0.9**
C	**Noise Pollution Control Measures**		
	Acoustic enclosure DG Sets	8.0	1.0
	Sound attenuation Panels/Cabins	2.0	0.5
	Silencers, Mufflers, Rubber mountings, isolators	2.0	0.5
	Sub Total (C) *Noise Pollution Control Measures*	**12.0**	**2.0**
D	**Solid & hazardous Waste management**		
	Concrete platform for temporary storage of Bag filter Dust, Slag, Mill Scale, End Cut / Reject along with tarpaulin sheets	5.0	1.0
	Concrete platform with bund wall and oil collection system for storage of HSD, and other Oil Drums and Used Oil	5.0	1.0
	Sub Total (D) Solid & hazardous Waste management	**10.0**	**2.0**
E	**Environmental Monitoring Program**		
	Cost of monitoring of environmental parameters for Ambient Air, Fugitive Emission, Work-Zone Emissions, Stack emissions, Effluent, Ground water, Soil Quality, Ambient & Work Zone Noise Levels monitoring, TCLP Test	--	3.82
	Installation of 1 nos. CAAQMS	50.0	2.50
	Installation of 2 nos. of OCEMS with Induction Furnace Plant & SAF plant	60.0	4.50
	Installation of Web camera at STP outfall	5.0	0.50
	Monitoring of Health of Workers	--	2.00
	Monitoring of Performance of Pollution Control Equipment	--	2.00
	Sub Total (E) Environmental Monitoring	**115.0**	**15.32**

	Program		
F	Occupational Health & Safety	10.0	17.5
G	Rain Water Harvesting	15.0	2.5
H	Greenbelt Development and Landscaping	20.2	2.0
	Total	232.2	46.12
I	Budget for implementation of commitments made to address the issues raised during the public hearing	24.0	
	Total EMP Budget Including Budget for Addressing Public Hearing Issues	256.2	46.12

- Company has proposed to develop greenbelt on 1.40Ha area (i.e. 33% of the total plant area), within the plant premises by planting 3700 number of Indigenous trees in consultation with local DFO along the boundary and inside the plant area. The greenbelt development needs to be carried out in 33% of total plant area i.e. 1.40Ha (3.45 Acres). As per the ToR condition, company shall be developing greenbelt under MIYAWAKI method of afforestation on an area of 0.404 Ha. (1 Acre) of land out of 1.40 Ha. (3.45 Acres) marked for 33% green cover in the plant premises. Proponent has already planted 220 numbers of trees till date within the project premises. For Miyawaki Plantation the PP will plant around 1200 trees in 0.41 Ha. The remaining 0.99 Ha. greenbelt area will be planted with 2475 trees as per CPCB guidelines. Total budget of greenbelt development will be Rs. 20 Lakhs and Rs. 2.0 Lakhs/Annum recurring budget.
- The Certified CTO Compliance was obtained from RO, JSPCB, Hazaribagh vide Memo No. 833 dated 22.05.2024. The Valid CTO was obtained on 12.06.2021 which is more than one year from the date of EC application therefore we have obtained Certified CTO Compliance from JSPCB as per MoEFCC OM dated 08.06.2022. There were no Non Compliance reported.
- There is no violation under EIA, 2006/court case/show cause/direction if any, related to the project under consideration.
- Name of the EIA consultant: Vardan EnviroNet LLP [S.No. 198 in List of ACOs with their Certificate/Extension Letter no. NABET/EIA/2326/RA0284-Rev.01 Valid up to April 04.05.2026]

STATUTORY CLEARANCES :

1	Land docs	:	Land deed (M/s Atibir Hi-Tech Private Limited)
2	CO	:	The CO, Giridih Sadar vide letter no. 1093, dated 08.09.2021 has mentioned the plot nos. of the project is not recorded as

			"Jungle- Jhari" in R.S. Khatiyan.
3	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 1674, dated 06.09.2019 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
4	DFO Territorial	:	DFO, Giridih East Division vide letter no. 2103, Dated 31.08.2018 certified that the distance of notified forest is 528 m from proposed project site.
5	Consent to Establish (CTE)	:	**CTE** issued by JSPCB vide memo no. : PC/NOC/HBG/558/B/D-1337(N), dated 29.05.2015.
6	Consent to Operate (CTO)	:	**CTO** issued by JSPCB vide : i. **Memo no.** : D-2040, dated 29.07.2011. ii. **Ref. no.** : JSPCB/HO/RNC/CTO-537727/2017/362, dated 07.04.2017. iii. **Ref. no.** : JSPCB/HO/RNC/CTO-9102932/2021/770, dated 12.06.2021.
7	CGWA	:	No Objection Certificate (NOC) for Ground Water Abstraction vide NOC no. CGWA/NOC/IND/ORIG/2022/15791, dated 23.05.2022 valid up to 22.05.2025.
8	Public Hearing	:	Regional Office –cum- Laboratory, JSPCB, Hazaribag vide letter no. 290, dated 22.02.2024 informed that Public Hearing conducted on 08.02.2024.
9	Baseline Study Period	:	1st October 2021 to 31st December 2021.

Based on the presentation made and information provided, the Committee decided that the proposal for Expansion & Modernization project for enhancement in the production capacity of TMT Bar in coils & MS Rods from 21,349 TPA to 237,600 TPA through modernization of its existing Re-Rolling Mill from 9 TPH to 50 TPH capacity along with replacement of existing 1x10 TPH Reheating Furnace by 1x30 TPH Reheating furnace and production of 148,500 TPA MS Billets by replacing the existing (2x8T & 1x6T) Induction Furnace by 3x15T induction Furnace along with installation of new 3x2 strand CCM and modernization of existing slag crusher from 5 TPH to 10 TPH capacity by M/s Atibir Hi-Tech Private Limited, Village : Mohanpur, Tehsil : Giridih, Distt. : Giridih, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – IV alongwith following specific conditions :

I. The reheating furnace shall be used only for the billets procured from out side the plant .

II. Maximum quantity of Rain Water Harvested shall be used within the plant permises and only surplus RWH water shall be recharged to ground.

III. No effluent to be discharged out side the plant premises.

IV. The Wildlife Conservation Plan has been submitted to DFO, Giridih vide letter dated 06.08.2024. Approved copy of Wildlife Conservation Plan shall be submitted to SEIAA/SEAC within 06 months of the grant of EC.

V. 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).

VI. MoU is to be executed with the buyers of the use refractory material before this expansion project comes into operation. Copy of MoU to be submitted SEIAA / SEAC, Jharkhand before expansion project comes into operation.

VII. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.

VIII. 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.

IX. All raw material to be stored only under covered shed.

X. 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.

XI. Trees should be developed & maintained not less than 33% of project area.

XII. Developers/Company to install ETP and / or STP of sufficient capacity such that all the waste water produced is treated and reused.

XIII. 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.

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

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. Suitable plants 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.

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3. **Harladangal Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Harladangal, Mochandih & Kurumtarn, Block : Jama, Distt. : Dumka, Jharkhand (2.24 Ha).**

(Proposal No : SIA/JH/MIN/ 485785/2024)

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

This is a new project which has been taken for appraisal on 24.08.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.
ToR Application for: Proposed Capacity: 10,880.60 Cum. / annum or 17,191.34 TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details	
1	Project Name	Harladangal Sand Ghat	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government Of Jharkhand Undertaking)	
3	Lease Address	Village : Harladangal, Mochandih & Kurumtarn, Block : Jama, Distt. : Dumka, Jharkhand	
4	Lease Area	2.24 Ha.	Acres – 5.53 Acres
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost: Rs. 16.33 Lakhs	Recurring: 4.10 Lakhs / Year
7	EMP Budget	Capital: Rs 6.125 Lakhs	Recurring: 5.5925 Lakhs / Year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	10881 m^3 (Round-off) (dry basis)	17191 (Round-off) Tonnes (dry basis)
10	Mine Life/ Lease Period	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	14	
12	Water Requirement	2.51 KLD (Drinking: 0.210 KLD, Dust Suppression: 1.11 KLD, Plantation: 1.19 KLD)	
13	Water Source	By authorised hired tankers	
14	DG Set / power	NA	

15	Crusher	NA
16	Nearest Water Body	Tepra River – Onsite
17	Nearest Habitation	Kurumtanr - 0.6 Km – N-W direction
18	Nearest Rail Station	Jama Railway station is located at a distance of about 5.73 Km in NE direction
19	Nearest Air Port	Deoghar Airport – 45 km in NW direction
20	Nearest Forest	More than 250 m, as per Forest Division. Letter No. – 510 Dated - 22/02/2023
21	Road & Highways	Dumka – Jamtara road – 4.34 Km in S-E direction.

CO-ORDINATES

GPS Coordinates		
Point	**Latitude**	**Longitude**
1	24°18'04.23" N	87°06'53.00" E
2	24°18'06.120" N	87°06'55.536" E
3	24°18'08.757" N	87°07'07.786" E
4	24°18'09.185" N	87°07'14.664" E
5	24°18'07.642" N	87°07'14.678" E
6	24°18'07.480" N	87°07'08.116" E
7	24°18'05.48" N	87°06'57.74" E
8	24°18'03.572" N	87°06'52.696" E

LAND DETAILS

Khata no.	Plot no.
38	1 & 89
37	783
44	909

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, Jama (Dumka) vide letter no. 358/Ra., dated 24.05.2024 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. 546/M, dated 04.05.2024 certified that 01 other balughat (3.65 Ha) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Hazaribag vide letter no. 1189, dated 23.06.2024 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. 1202, dated 28.04.2023 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 23, Page no. 84).
7	Gram Sabha	:	Gram Sabha conducted on 29.04.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 551/M, dated 04.05.2024.
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 Manual Method	
2	Quarry Area	1.1 Ha.	Mine life/Lease Period - 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.
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25 $(meter)^2$	
7	Elevation of Mine	89.87 m AMSL (Pre-Monsoon) & 88.87 m AMSL (Post-Monsoon)	
8	Ground Level Elevation	85.87 m AMSL	
9	Ultimate Working Depth	3 m	
10	Water Table	83.57 m AMSL	

11	Topography of Mine	Flat
12	Diesel/Fuel requirement	HSD – 24 L/Day

Production Details

Year	Production of Sand (cum)	Production of Sand (tonnes)
1st	10880.60	17191.34

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	1.1	Area may vary based on flow of water in the subsequent year.
2	Loss due to Safety zone & Active channel	1.14	• Distance from the bank should be 1/4th of River width and should not be less than 7.5 meters. • Mining shall be restricted within the central 3/4thwidth of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. • Mining shall be restricted 60 % area for both side of river edge.
Total		2.24	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	635 m	211
2	Along Approach Road	277 m	184

- 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	--	2,00,000
2	Plantation (@Rs.1500 per plant) 395 X 1500 = 5,92,500 (Includes Fertilizer, Pesticides, Maintenance)	5,92,500	59,250
3	Tarpaulin (To improve efficiency, reduce waste and minimize environmental impact)	20,000	
4	Sand Replenishment Survey		2,00,000
5	Environmental Monitoring (One Day Monitoring) • Ambient Air (8 points) 24 hrs - Rs. 32,000 • Water (2 Point) - Rs. 8,000 • Noise 24 hrs (5 Points) - Rs. 10,000 **Total - Rs. 50,000 (Per Season)** **Atleast two season in a Year - Rs. 50,000 x 2 = Rs. 1,00,000**	--	1,00,000
Total		**6,12,500**	**5,59,250**

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	8 stations	6 Monthly
2.	Surface Water	2 stations	6 Monthly
3.	Noise	5 stations	6 Monthly

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- 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.

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

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

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 Approachroad by using water tankers.
- ✓ Regular repair of Approach 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;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

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.

Preventive 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 minimise 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 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. 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.

k. Mining will be restricted upto 3 meter.

Baseline data has been collected for the period March, 2024 to May, 2024.

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 23, 24 & 25.08.2024, 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).

II. Transportation from the river bed will be done using the existing road.

III. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.

IV. Wet sand will not be transported.

V. Pre-monsoon data of current year is to be included in final EIA report.

VI. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

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4. **Raha Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Raha, Circle : Godda, Distt. : Godda, Jharkhand (1.97 Ha).**

(Proposal No : SIA/JH/MIN/ 486933/2024)

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

This is a new project which has been taken for appraisal on 24.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 14,752 Cum. / annum or 25,521 TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details	
1	Project Name	Raha Sand Ghat	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government Of Jharkhand Undertaking)	
3	Lease Address	Village : Raha, Circle : Godda, Distt. : Godda, Jharkhand	
4	Lease Area	1.97 Ha.	Acres – 4.87 Acres
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost: Rs. 11.94 Lakhs	Recurring: 4.1 Lakhs / Year
7	EMP Budget	Capital: Rs 5.30 Lakhs	Recurring: 5.51 Lakhs / Year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	14,752 m^3 (Round-off) (dry basis)	25,521 (Round-off) Tonnes (dry basis)
10	Mine Life/ Lease Period	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	14	
12	Water Requirement	1.6 KLD (Drinking: 0.21 KLD, Dust Suppression: 0.372 KLD, Plantation: 1.020 KLD)	
13	Water Source	By authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	

16	Nearest Water Body	Gerua Nadi– Onsite
17	Nearest Habitation	Raha – 0.8 Km – E direction
18	Nearest Rail Station	Godda Railway station is located at a distance of about 21 Km in S direction
19	Nearest Air Port	Deoghar Airport – 77.7 km in SW direction
20	Nearest Forest	More than 250 m, as per Forest Division. Letter No. – 1839 Dated - 30/12/2022
21	Road & Highways	• Village road - 93 m in East direction • NH-133 Hansdiha - Mahagama road – 15.33 Km in West direction.

CO-ORDINATES

GPS Coordinates		
Point	**Latitude**	**Longitude**
A	25° 01' 17.211" N	87° 08' 51.559" E
B	25° 01' 23.482" N	87° 08' 56.527" E
C	25° 01' 22.396" N	87° 08' 57.953" E
D	25° 01' 18.798" N	87° 08' 54.511" E
E	25° 01' 16.702" N	87° 08' 52.583" E
F	25° 01' 14.094" N	87° 08' 49.180" E
G	25° 01' 12.710" N	87° 08' 48.116" E
H	25° 01' 10.515" N	87° 08' 47.083" E
I	25° 01' 07.347" N	87° 08' 46.618" E
J	25° 01' 05.793" N	87° 08' 46.507" E
K	25° 01' 05.969" N	87° 08' 45.451" E
L	25° 01' 10.526" N	87° 08' 46.175" E
M	25° 01' 14.561" N	87° 08' 48.441" E

LAND DETAILS

Khata no.	Plot no.
129	188, 187 & 468

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, Basantrai vide letter no. 250/Ra., dated 17.05.2024 has mentioned the plot no. of the project is not recorded as "Jungel-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Godda vide letter no. 700/M, dated 06.05.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Sahibganj Forest Division vide letter no. 1199, dated 19.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Godda Forest Division vide letter no. 1193, dated 29.06.2024 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Godda District (Page No. – 77, Sl. No. - 1). The plot no. 187, 188 & 468 lies within the Co-ordinates given in approved DSR of Sand of Godda District.
7	Gram Sabha	:	BDO, Basantrai vide letter no. 445/Vi., dated 17.05.2024 informed that Gram Sabha conducted on 16.05.2024.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer, Godda vide Memo No. 703/M, dated 06.05.2024.
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 Manual Method	
2	Quarry Area	1.47 Ha.	Mine life/Lease Period - 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.
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25 $(meter)^2$	
7	Elevation of Mine	-9.54 m AMSL (Pre-Monsoon) & -10.54 m AMSL (Post-Monsoon)	

8	Ground Level Elevation	-7.54 m AMSL
9	Ultimate Working Depth	3 m
10	Water Table	-6.52 m AMSL
11	Topography of Mine	Flat
12	Diesel/Fuel requirement	HSD – 24 L/Day

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes)
1st	14751.95	25520.87

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	1.47	Area may vary based on flow of water in the subsequent year.
2	Loss due to Safety zone & Active channel	0.5	• Distance from the bank should be 1/4th of River width and should not be less than 7.5 meters. • Mining shall be restricted within the central 3/4thwidth of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. • Mining shall be restricted 60 % area for both side of river edge.
Total		1.97	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	834 m	278
2	Along Approach Road	93 m	62

- 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	--	2,00,000
2	Plantation (@Rs.1500 per plant) 340 X 1500 = 5,10,000 (Includes Fertilizer, Pesticides, Maintenance)	5,10,000	51,000
3	Tarpaulin (To improve efficiency, reduce waste and minimize environmental impact)	20,000	
5	Environmental Monitoring (One Day Monitoring) • Ambient Air (8 Point) 24 hrs - Rs. 32,000 • Water (2 Point) - Rs. 8,000 • Noise 24 hrs (5 Point) - Rs. 10,000 **Total - Rs. 50,000 (Per Season)** **Atleast two season in a Year - Rs. 50,000 x 2 = Rs. 1,00,000**	--	1,00,000
Total		**5,30,000**	**3,51,000**

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	8 stations	6 Monthly
2.	Surface Water	2 stations	6 Monthly
3.	Noise	5 stations	6 Monthly

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- 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.

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

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

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 Approachroad by using water tankers.
- ✓ Regular repair of Approach 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;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

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.

Preventive 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 minimise 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 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. 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.
k. Mining will be restricted upto 3 meter.

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 Raha Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Raha, Circle : Godda, Distt. : Godda, Jharkhand (1.97 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).

II. 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.

III. 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.

IV. 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.

V. 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.

VI. 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.

VII. 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.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

X. 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.

XI. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XII. 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.

XIII. 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.

XIV. 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.

XV. Extraction of sand beyond annual production capacity is not permitted.

XVI. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVII. 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.

XVIII. 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.

XIX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XX. No labour camp shall be allowed in riverbed.

XXI. 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.

XXII. 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.

XXIII. 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.

XXIV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXV. 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.

XXVI. 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.

XXVII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXVIII. 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.

XXIX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXX. Mining depth should be restricted to 3 meters and distance from the band should be 1/4th of river width and should not be less than 7.5 meters.

XXXI. 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.

XXXII. River bed sand mining shall be restricted within the central 3/4th 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.

XXXIII. Transportation from the river bed will be done using the existing road.

XXXIV. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.

XXXV. Wet sand will not be transported.

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5. **Chhotakamti Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Chhotakamti, Pariharpur & Chakkamardaha, Block : Raneshwar, Distt. : Dumka, Jharkhand (3.71 Ha).**

(Proposal No : SIA/JH/MIN/ 493413/2024)

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

This is a new project which has been taken for appraisal on 24.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 64,026.96 Cum. / annum or 1,05,004.21 TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details
1	Project Name	Chhotakamti Sand Ghat
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government Of Jharkhand Undertaking)

3	Lease Address	Village : Chhotakamti, Pariharpur & Chakkamardaha, Block : Raneshwar, Distt. : Dumka, Jharkhand	
4	Lease Area	3.71 Ha.	Acres – 9.16 Acres
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost: Rs. 12.83 Lakhs	Recurring: 16.7 Lakhs / Year
7	EMP Budget	Capital: Rs 4.86 Lakhs	Recurring: 5.39 Lakhs / Year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	64026.96 m^3 (Round-off) (dry basis)	105004.21 (Round-off) Tonnes (dry basis)
10	Mine Life/ Lease Period	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	49	
12	Water Requirement	2.387 KLD (Drinking: 0.735 KLD, Dust Suppression: 0.86 KLD, Plantation: 0.792 KLD)	
13	Water Source	By authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	
16	Nearest Water Body	Mayurakshi river – Onsite	
17	Nearest Habitation	Chhotakamti - 0.61Km – N direction	
18	Nearest Rail Station	Suri Railway station is located at a distance of about 16.97 Km in SE direction	
19	Nearest Air Port	Deoghar Airport – 85.51 km in NW direction	
20	Nearest Forest	More than 250 m, as per Forest Division. Letter No. –1213 Dated - 22/05/2024	
21	Road & Highways	Nearest village road is 0.2 m North direction from the lease area and this road after 2.52 km West direction connected with NH14.	

CO-ORDINATES

GPS Coordinates		
Point	**Latitude**	**Longitude**
A	24° 0'24.651" N	87° 25' 21.120" E
B	24° 0' 31.702" N	87° 25' 10.844" E

C	24° 0' 34.574" N	87° 25' 12.780" E
D	24° 0'27.210" N	87° 25'23.236" E

LAND DETAILS

Khata no.	Plot no.
94	942
218	2843

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, Raneshwar (Dumka) vide letter no. 320/Ra., dated 17.05.2024 has mentioned the plot no. of the project is not recorded as "Jungel-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 538/M, dated 08.05.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 882, dated 16.05.2024 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. 1213, dated 22.05.2024 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Page No. – 79, Sl. No. - 4)
7	Gram Sabha	:	CO, Ranehswar (Dumka) vide letter no. 281/Ra., dated 26.04.2024 informed that Gram Sabha conducted on 25.04.2024.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer, Dumka vide Letter No. 549/M, dated 04.05.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and

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			affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Manual Method	
2	Quarry Area	3.20 Ha.	Mine life/Lease Period - 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.
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25 $(meter)^2$	
7	Elevation of Mine	37.61 m AMSL (Pre-Monsoon) & 37.91 m AMSL (Post-Monsoon)	
8	Ground Level Elevation	37.50 m AMSL	
9	Ultimate Working Depth	3 m	
10	Water Table	34.25 m AMSL	
11	Topography of Mine	Flat	
12	Diesel/Fuel requirement	HSD – 15.68 litres / day (3.136 kl/year)	

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes)
1st	64026.96	105004.21

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	3.20	Area may vary based on flow of water in the subsequent year.

2	Loss due to Safety zone & Active channel	0.51	• Distance from the bank should be 1/4th of River width and should not be less than 7.5 meters. • Mining shall be restricted within the central 3/4thwidth of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. • Mining shall be restricted 60 % area for both side of river edge.
Total		3.71	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	368 m	122
2	Along Approach Road	215 m	142

- 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	--	2,00,000
2	Plantation (@Rs.1500 per plant) 264 X 1500 = 3,96,000 (Includes Fertilizer, Pesticides, Maintenance)	3,96,000	39,600
3	Tarpaulin (To improve efficiency, reduce waste and minimize environmental impact)	90,000	
4	Sand Replenishment Survey		2,00,000

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
5	Environmental Monitoring (One Day Monitoring) • Ambient Air (8 Points) 24 hrs - Rs. 32,000 • Surface water (2 Point) - Rs. 8,000 • Noise 24 hrs (5 Points) - Rs. 10,000 **Total - Rs. 50,000 (Per Season)** **Atleast two season in a Year - Rs. 50,000 x 2 = Rs. 1,00,000**	--	1,00,000
Total		**4,86,000**	**5,39,600**

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	8 stations	6 Monthly
2.	Surface Water	2 stations	6 Monthly
3.	Noise	5 stations	6 Monthly

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- 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.

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

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

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 Approachroad by using water tankers.
- ✓ Regular repair of Approach 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;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

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.

Preventive 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 minimise 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 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. 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.
k. Mining will be restricted upto 3 meter.

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 Chhotakamti Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Chhotakamti, Pariharpur & Chakkamardaha, Block : Raneshwar, Distt. : Dumka, Jharkhand (3.71 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).
II. 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.
III. 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.
IV. 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.
V. 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.
VI. 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.

VII. 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.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

X. 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.

XI. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XII. 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.

XIII. 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.

XIV. 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.

XV. Extraction of sand beyond annual production capacity is not permitted.

XVI. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVII. 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.

XVIII. 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.

XIX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XX. No labour camp shall be allowed in riverbed.

XXI. 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.

XXII. 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.

XXIII. 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.

XXIV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXV. 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.

XXVI. 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.

XXVII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXVIII. 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.

XXIX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXX. 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.

XXXI. 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.

XXXII. 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.

XXXIII. Transportation from the river bed will be done using the existing road.

XXXIV. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.

XXXV. Wet sand will not be transported.

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6. **Chedra Stone Mine of M/s Banwar Stone Chips (Partners : (i) Shri Shailendra Kumar Mehta (ii) Shri Kumar Vinay (iii) Shri Vicky Kumar), Village : Chedra, Thana no. : 54, Thana : Balumath, Distt.: Latehar, Jharkhand (1.58 Ha).**

(Proposal no.: SIA/JH/MIN/493049/2024)
Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 32426 Cum. / annum or 87550 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chedra Stone Mine	
2	Lessee:	:	M Banwar Stone Chips Partners- (1)Shailendra Kumar Mehta, (2) Kumar Vinay, (3) Vicky Kumar	
3	Lease Address	:	Village : Chedra, Thana no. : 54, Thana : Balumath, Distt.: Latehar, Jharkhand	
4	Lease Area	:	1.58 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital: 70.40 Lakhs	Recurring: 7.15 Lakhs per year
7	EMP Budget	:	Capital: 8.70 Lakhs	Recurring: 5.50 Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 108704 cum	Tonnes: 293501 tons
10	Mine Life	:	8 years.	
11	Man power	:	24 Person	
12	Water Requirement	:	5.1 KLD (Drinking: 0.36 KLD, Dust Suppression: 0.48 KLD, Plantation: 4.26 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	:	Sukri river – 0.32 Km in S direction	
17	Nearest Habitation	:	Chedra Village at 0.11km North-East direction	
18	Nearest Rail Station	:	Tori Junctionis 28.67 km (aerial distance) in South-West direction	
19	Nearest Air Port	:	Ranchi, Airport at 73.72 km S-E Direction	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.-444 Dated- 10/03/2022	

21	Road & Highways	:	NH-22(Chandwa-Chatra road) at 14.61 km (aerial distance) North-West Direction.

CO-ORDINATES

1	Latitude		From N 23° 52' 02.667"	To N 23° 52' 07.762"
2	Longitude		From E 84° 55'24.446"	To E 84° 55' 19.131"

LAND DETAILS

Khata no.	Plot no.
91	1399
94	1397 & 1400 (P)
103	1401 & 1402 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Latehar vide letter no. 107/M, dated 09.02.2024.
2	CO	:	The CO, Bariyatu vide letter no. 50, dated 26.02.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Latehar vide memo no. 698/M, dated 06.08.2024 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. 2518, dated 17.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Latehar Forest Division vide letter no. 444, dated 10.03.2022 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Latehar District (Sl. no. 02, Page no. 56).
7	Gram Sabha	:	BDO, Bariyatu vide letter no. 184, dated 26.02.2022 informed that Gram Sabha conducted on 22.02.2022.

8	Mine Plan Approval	:	Approved by Assistant Mining Officer –cum- Incharge District Mining Officer, Latehar vide Memo No. 701/M, dated 06.08.2024.
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 Semi-Mechanized Method	
2	Quarry Area	:	1.58 Ha	Life of Mine – 05 year
3	Waste Generation	:	17588 cum	
4	Stripping Ratio	:	1: 17.41 or 0.06	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6.6 m,	
7	Elevation of Mine	:	518 - 511 AMSL	
8	Ground Level Elevation	:	511 AMSL	
9	Ultimate Working Depth	:	490m AMSL	
10	Water Table	:	Post Monsoon – 475 m AMSL Pre Monsoon – 481 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	26.733 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 740 liters / day (222 KL/year)	

Production Details

SUMMARY OF YEAR WISE PRODUCTION						
Years	**Production In Cum/Year**	**Production In Cum/Day**	**O.B Production in Cum/Year**	**Production In Tons/Year**	**Prod. In Tons. /Day**	**Bench Height (AMSL)**
1st	10174	34	4444	27470	92	A-A' (516-510) B-B' (514-508) (Stone)
2nd	15946	144	13144	43054	144	A-A' (510-504) A-A' (504-498) A-A' (498-492) (Stone)
3rd	20956	189	0	56581	189	C-C' (514-508) (Stone)
4th	32426	292	0	87550	292	C-C' (508-502) (Stone)
5th	29202	263	0	78845	263	
Total	**108704**	**292 Max**	**17588**	**293501**	**292 Max.**	**Depth : 24 m**

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Actiities	0.00
2	Offices/Store	0.00
3	Dumping	0.00
4	Mining Road	0.00
5	Garland drain	0.00
6	Settling Tank	0.00
7	Green belt/ Safety Zone	0.00
8	Balance area unused	1.58
	TOTAL	**1.58**

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Ha)
1	Mining Actiities	1.028
2	Offices/Store	0.004
3	Dumping	0.000
4	Mining Road	0.020
5	Garland drain	0.032
6	Settling Tank	0.02
7	Green belt/ Safety Zone	0.45
8	Balance area unused	0.03
	TOTAL	**1.58**

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Actiities	1.028	Water body
2	Offices/Store	0.004	Plantation
3	Dumping	0.000	-
4	Mining Road	0.020	Plantation
5	Garland drain	0.032	Water body
6	Settling Tank	0.02	Water body

6	Green belt/ Safety Zone	0.45	Green Belt
7	Balance area unused	0.03	Plantation
	TOTAL	**1.58**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.054 Ha	135
2	Along Approach Road		0.12 km	80
TOTAL				**1420**

- 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 500 X 2673 = Rs 13,36,500 (Gabion Plantation along approach road) (also includes Fertilizer, Pesticides, Maintenance)	13,36,500	1,00,000
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**	--	1,00,000

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	x 2 = Rs. 1,00,000		
Total		13,36,500	5,00,000

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	1 Day
2	Soil	3 stations	1 Day
3	Noise	3 stations	1 Day

Solid Waste Management

During first year 17588 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.

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 Chedra Stone Mine of M/s Banwar Stone Chips (Partners : (i) Shri Shailendra Kumar Mehta (ii) Shri Kumar Vinay (iii) Shri Vicky Kumar), Village : Chedra, Thana no. : 54, Thana : Balumath, Distt.: Latehar, Jharkhand (1.58 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).
II. 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.

III. 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.

IV. 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.

V. 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.

VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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7. **Banwar Stone Deposit of M/s Banwar Stone Chips (Partners : (i) Shri Shailendra Kumar Mehta (ii) Shri Kumar Vinay (iii) Shri Vicky Kumar), Village : Banwar, Thana no. : 51, Thana : Bariyatu, Distt.: Latehar, Jharkhand (2.18 Ha).**

(Proposal no.: SIA/JH/MIN/492904/2024)

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

This is a new project which has been taken for appraisal on 24.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 40093 Cum. / annum or 108251 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Banwar Stone Mine
2	Lessee:	:	M Banwar Stone Chips Partner- (1) Shailendra Kumar Mehta, (2) Kumar Vinay & (3) Vicky Kumar
3	Lease Address	:	Village : Banwar, Thana no. : 51, Thana : Bariyatu, Distt.: Latehar, Jharkhand
4	Lease Area	:	2.18 Ha
5	Type of Land	:	Non Forest Raiyati Land

6	Project Cost		Capital: 75.90 Lakhs	Recurring: 8.55 Lakhs per year
7	EMP Budget	:	Capital: 11.02 Lakhs	Recurring: 5.50 Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 164858 cum	Tonnes: 445117 tons
10	Mine Life	:	5 years.	
11	Man power	:	25 Person	
12	Water Requirement	:	6.659 KLD (Drinking: 0.375 KLD, Dust Suppression: 0.32 KLD, Plantation: 5.964 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	:	Sukri river – 0.37 Km in SWdirection	
17	Nearest Habitation	:	Chedra Village at 0.11km North-East direction	
18	Nearest Rail Station	:	Tori Junctionis 28.76 km (aerial distance) in South-West direction.	
19	Nearest Air Port	:	Ranchi, Airport at 73.74 km S-E Direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.-1644 Dated- 22/10/2021	
21	Road & Highways	:	NH-22(Chandwa-Chatra road) at 13.33 km(aerial distance) West Direction.	

CO-ORDINATES

1	Latitude		From N 23° 52' 23.459"	To N 23° 52' 29.992"
2	Longitude		From E 84° 55'49.781"	To E 84° 55' 41.592"

LAND DETAILS

Khata no.	Plot no.
49	544, 550 & 552 (P)
50	551 & 553 (P)
55	543
69	542

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Latehar vide letter no. 1308/M, dated 21.12.2023.

2	CO	:	The CO, Bariyatu vide letter no. 461, dated 18.10.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Latehar vide memo no. 699/M, dated 06.08.2024 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. 2521, dated 17.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Latehar Forest Divisioin vide letter no. 1644 dated 22.10.2021 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Latehar District (Sl. no. 1, Page no. 56).
7	Gram Sabha	:	BDO, Bariyatu vide letter no. 940, dated 18.11.2021 informed that Gram Sabha conducted on 28.10.2021.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer –cum- Incharge District Mining Officer, Latehar vide Memo No. 700/M, dated 06.08.2024.
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 Semi-Mechanized Method	
2	Quarry Area	:	2.18 Ha	Life of Mine – 05 year
3	Waste Generation	:	25825 cum	
4	Stripping Ratio	:	1: 17.41 or 0.06	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	510 - 477 AMSL	
8	Ground Level Elevation	:	477 AMSL	
9	Ultimate Working Depth	:	477 m AMSL	
10	Water Table	:	Post Monsoon – 460 m AMSL Pre Monsoon – 468 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	35.64 kg Slurry explosives/day	

13	Diesel/Fuel requirement	:	HSD – 804 liters / day (241.2 KL/year)

Production Details

SUMMARY OF YEAR WISE PRODUCTION						
Years	**Production In Cum/Year**	**Production In Cum/Day**	**O.B Production in Cum/Year**	**Production In Tons/Year**	**Prod. In Tons. /Day**	**Bench Height (AMSL)**
1st	21819	73	11265	58911	196	A-A' (507-501) B-B' (505-499) (Stone)
2nd	25339	84	0	68415	228	A-A' (501-495) B-B' (499-493) (Stone)
3rd	35997	120	0	97192	324	A-A' (495-489) B-B' (493-487) A-A' (489-483) B-B' (487-481) A-A' (483-477) (Stone)
4th	40093	134	14560	108251	361	E-E' (500-494) D-D' (501-495) C-C' (503-497) (Stone)
5th	29202	263	0	78845	263	E-E' (494-488) D-D' (488-482) C-C' (497-491) (Stone)
Total	**108704**	**292 Max**	**17588**	**293501**	**292 Max.**	**Depth : 26 m**

Land Use

Existing Land Use pattern

Sl. No.	Pattern	Existing Land Use (Ha)
1	Mining Actiities	0.00
2	Offices/Store	0.00
3	Dumping	0.00
4	Mining Road	0.00
5	Garland drain	0.00
6	Settling Tank	0.00
7	Green belt/ Safety Zone	0.00
8	Balance area unused	2.18
	TOTAL	**2.18**

Land Use Pattern for Proposed Plan Period:

Sl. No.	Pattern	Land Use during plan period (Ha.)
1	Mining Actiities	1.34
2	Offices/Store	0.004
3	Dumping	0.024
4	Mining Road	0.024
5	Garland drain	0.048
6	Settling Tank	0.012
7	Safety Zone	0.676
8	Balance area unused	0.048
	TOTAL	**2.18**

Land Use Pattern after Life of the Mine:

Sl. No.	Pattern	Existing Land Use (Ha)	Area to be conerted in the conceptual period
1	Mining Actiities	1.34	Water body
2	Offices/Store	0.004	Plantation
3	Dumping	0.024	Plantation
4	Mining Road	0.024	Water body
5	Garland drain	0.048	-
6	Settling Tank	0.012	-
7	Safety Zone	0.676	Plantation
8	Balance area unused	0.048	Plantation
	TOTAL	**2.18**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.676 Ha	1690
2	Along Approach Road		0.08 km	108
TOTAL				**1798**

- 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 1500 X 108 trees = Rs 1,62,000 (Gabion Plantation along approach road) 500 X 1880 Trees = Rs. 9,40,000 (also includes Fertilizer, Pesticides, Maintenance)	11,02,000	1,50,000
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		**11,02,000**	**5,50,000**

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	1 Day
4.	Soil	3 stations	1 Day
5.	Noise	3 stations	1 Day

Solid Waste Management

During first year 25825 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	Probable	Moderate	6

		(Bodily Injury)			
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°
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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

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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.

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

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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

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
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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.
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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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- 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 Banwar Stone Deposit of M/s Banwar Stone Chips (Partners : (i) Shri Shailendra Kumar Mehta (ii) Shri Kumar Vinay (iii) Shri Vicky Kumar), Village : Banwar, Thana no. : 51, Thana : Bariyatu, Distt.: Latehar, Jharkhand (2.18 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).

II. 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.

III. 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.

IV. 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.

V. 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.

VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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8. **Bichlidag Stone Deposit of Smt. Rita Devi, Village : Bichlidag, P.O. + P.S. : Manika, Distt.: Latehar, Jharkhand (0.97 Ha).**

(Proposal no.: SIA/JH/MIN/493436/2024)

At the time of consideration of the proposal the PA was not available. Hence, the proposal is deferred for the next meeting.

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9. **Bandhdih Stone Mine of M/s Jai Mata Di Enterprises (Prop. : Shri Harpreet Singh Jaggi), Village : Bandhdih, Thana no. : 11, Thana : Jaridih, Distt.: Bokaro, Jharkhand (2.436 Ha).**

(Proposal no.: SIA/JH/MIN/493275/2024)

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

This is a new project which has been taken for appraisal on 24.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 51,600 Cum. / annum or 1,44,480 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bandhdih Stone Mine	
2	Lessee:	:	M/s Jai Mata Di Enterprises Proponent Shri Harpreet Singh Jaggi	
3	Lease Address	:	Village : Bandhdih, Thana no. : 11, Thana : Jaridih, Distt.: Bokaro, Jharkhand	
4	Lease Area	:	2.436 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs.134.83 Lakhs	Recurring Cost: Rs. 22.55 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 13.06 Lakhs	Recurring Cost: Rs. 5.306 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 1,56,732 cum	Tonnes: 4,38,850 tons
10	Mine Life	:	5 years.	
11	Man power	:	34 Person	
12	Water Requirement	:	9.15 KLD (Drinking: 0.510 KLD, Dust Suppression: 3.71 KLD, Plantation: 4.93 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	:	Khanjo river – 0.150 Km in NE direction	
17	Nearest Habitation	:	Kochagora Village – 0.758 Km in SW direction	
18	Nearest Rail Station	:	Bokaro Steel City Railway Station is 9.00 km (aerial distance) in SE direction.	

19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) at 80.52 km (aerial distance) SW Direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.-1989 Dated- 30/08/2023
21	Road & Highways	:	A well motorable road is connected to the mine site at a distance of 50 m SW direction. (Jainamore – Peterbar) Road is at areal distance of 1.04 Km South Direction.

CO-ORDINATES

1	Latitude		From 23° 40' 34.18453200" N	To 23° 40' 32.08805040" N
2	Longitude		From 085° 59' 54.07816200" E	To 085° 59' 42.68859360" E

LAND DETAILS

Khata no.	Plot no.
113	47 & 64

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 944/Khanan, dated 18.06.2024.
2	CO	:	The CO, Jaridih (Bokaro) vide letter no. 556, dated 26.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 1191/M, dated 06.08.2024 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. 1708, dated 05.08.2023 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. 1989, dated 30.08.2023 certified that the distance of notified forest is 2120 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Bokaro District (Sl. no. 50, Page no. 24).
7	Gram Sabha	:	BDO, Jaridih vide letter no. 1149, dated 11.08.2023 informed that Gram Sabha conducted on 01.08.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1190/M, dated 06.08.2024.

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 Semi-Mechanized Method	
2	Quarry Area	:	2.436 Ha	Life of Mine – 5 year
3	Waste Generation	:	13,035 cum	
4	Stripping Ratio	:	0.029	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	293 - 286 AMSL	
8	Ground Level Elevation	:	294 AMSL	
9	Ultimate Working Depth	:	256.5 m AMSL	
10	Water Table	:	Post Monsoon – 248 m AMSL Pre Monsoon – 244 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	55.44 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 343 liters / day (103 KL/year)	

Production Details

Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1st	25092	84	7125	70258	234
2nd	51600	172	0	144480	482
3rd	40380	135	0	113064	377
4th	21912	73	5910	61354	205
5th	17748	59	0	49694	166
Total	**1,56,732**	**172 Max.**	**13035**	**4,38,850**	**482 Max.**

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Area	0.00
2	Office	0.00

3	Dumping	0.00
4	Road	0.00
5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt/ Safety Zone	0.00
8	Utilized	0.00
9	Unutilized	2.44
	TOTAL	**2.44**

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)
1	Mining Area	3.59
2	Office	0.01
3	Dumping	0.25
4	Road	0.05
5	Garland drain	0.10
6	Settling Pond	0.03
7	Safety Zone	1.80
8	Unutilized	0.19
	TOTAL	**6.02**

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Area	3.59	Water body
2	Office	0.01	Green Belt
3	Dumping	0.25	Green Belt
4	Road	0.05	Water body
5	Garland drain	0.10	-
6	Settling Pond	0.03	Water body
7	Safety Zone	1.80	Greenbelt
8	Unutilized	0.19	Greenbelt
	TOTAL	**6.02**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.725 Ha	1,160
2	Along Approach		0.726 km	484

	Road			
TOTAL				**1,644**

- 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 484 X 1500 = Rs 7,26,000 (Gabion Plantation along approach road) 1160 X 500 = 5,80,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	13,06,000	1,30,600
3	Environmental Monitoring (One Day Monitoring) • Ambient Air (3 points) 24 hrs -Rs. 32,000 • Soil (3 point) -Rs.8,000 • Noise (3 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		**13,06,000**	**5,30,600**

Solid Waste Management

During first year 7125 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:

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

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- 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 Bandhdih Stone Mine of M/s Jai Mata Di Enterprises (Prop. : Shri Harpreet Singh Jaggi), Village : Bandhdih, Thana no. : 11, Thana : Jaridih, Distt.: Bokaro, Jharkhand (2.436 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).
II. 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.

III. 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.

IV. 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.

V. 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.

VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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10. 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)

The DSR of Bokaro District was approved by SEIAA, Jhakhand on 28.04.2023 as per recommendation of SEAC based on the proposal of DSR submitted by DC, Bokaro duly authenticated by Sub-Divisional Committee.

The above project is not a part of the approved DSR as mentioned above.

The DC, Bokaro vide memo no. 1248/M, dated 21.08.2024 addressed to Member Secretary, SEIAA has mentioned that the above project alongwith several other areas are part of Potential Stone Deposits of Bokaro. However, neither the villages nor the Blocks are listed as potential area in the DSR.

Hence, SEAC is of the view that SEIAA may request the DC, Bokaro to submit his proposal for consideration of revised DSR by including all the other left out potential mining areas or the potential villages with Block details for approval to SEIAA.

This project could not be taken up for consideration for grant of EC as the project is not a part of the present approved DSR.

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11. **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)

The DSR of Bokaro District was approved by SEIAA, Jhakhand on 28.04.2023 as per recommendation of SEAC based on the proposal of DSR submitted by DC, Bokaro duly authenticated by Sub-Divisional Committee.

The above project is not a part of the approved DSR as mentioned above.

The DC, Bokaro vide memo no. 1248/M, dated 21.08.2024 addressed to Member Secretary, SEIAA has mentioned that the above project alongwith several other areas are part of Potential Stone Deposits of Bokaro. However, neither the villages nor the Blocks are listed as potential area in the DSR.

Hence, SEAC is of the view that SEIAA may request the DC, Bokaro to submit his proposal for consideration of revised DSR by including all the other left out potential mining areas or the potential villages with Block details for approval to SEIAA.

This project could not be taken up for consideration for grant of EC as the project is not a part of the present approved DSR.

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12. **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)

The DSR of Bokaro District was approved by SEIAA, Jhakhand on 28.04.2023 as per recommendation of SEAC based on the proposal of DSR submitted by DC, Bokaro duly authenticated by Sub-Divisional Committee.

The above project is not a part of the approved DSR as mentioned above.

The DC, Bokaro vide memo no. 1248/M, dated 21.08.2024 addressed to Member Secretary, SEIAA has mentioned that the above project alongwith several other areas are part of Potential Stone Deposits of Bokaro. However, neither the villages nor the Blocks are listed as potential area in the DSR.

Hence, SEAC is of the view that SEIAA may request the DC, Bokaro to submit his proposal for consideration of revised DSR by including all the other left out potential mining areas or the potential villages with Block details for approval to SEIAA.

This project could not be taken up for consideration for grant of EC as the project is not a part of the present approved DSR.

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13. **Nawadih Stone Mine of M/s Maa Vaishno Enterprises (Partners : (i) Shri Bijay Kumar Agarwal (ii) Shri Ritesh Roshan), Village : Nawadih, Thana : Peterwar, Distt.: Bokaro, Jharkhand (2.40 Ha).**

(Proposal no.: SIA/JH/MIN/493291/2024)

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

This is a new project which has been taken for appraisal on 24.08.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 40,362 Cum. / annum or 1,13,014 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Nawadih Stone Mine	
2	Lessee:	:	Maa Vaishno Enterprises (1) Shri Bijay Kumar Agarwal (2) Shri Ritesh Roshan (Partner)	
3	Lease Address	:	Village : Nawadih, Thana : Peterwar, Distt.: Bokaro, Jharkhand	
4	Lease Area	:	2.40 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 133.72 Lakhs	Recurring Cost: Rs. 17.48 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 13.59 Lakhs	Recurring Cost: Rs. 5.059 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 2,37,306 cum	Tonnes: 6,64,456.8 tons
10	Mine Life	:	8 years.	
11	Man power	:	24 Person	
12	Water Requirement	:	7.12 KLD (Drinking: 0.360 KLD, Dust Suppression: 2.62 KLD, Plantation: 4.14 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	:	Khanjo river – 0.160 Km in South direction	

17	Nearest Habitation	:	Bulan Khetko Village – 0.693 Km in NW direction
18	Nearest Rail Station	:	Bokaro Steel City Railway Station is at aerial distance of 11.98 km SE direction.
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 75.38 km SW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 1264 Dated- 27/05/2023
21	Road & Highways	:	A well motorable road is connected to the Mine Site at a distance of 0.15 Km SW direction. (Peterwar – Siwandih) Road is at aerial distance of 2.53 Km South Direction.

CO-ORDINATES

1	Latitude		From 23° 40' 51.40573680" N	To 23° 40' 58.01562480" N
2	Longitude		From 85° 58' 15.94301880" E	To 85° 58' 07.32292320" E

LAND DETAILS

Khata no.	Plot no.
103	213 & 214
123	217
122	218 (P)
116	220

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 942/Khanan, dated 18.06.2024.
2	CO	:	The CO, Peterwar vide letter no. 138, dated 15.02.2023 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. 1230/M, dated 16.08.2024 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. 1261, dated 03.07.2023 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. 1264, dated 27.05.2023 certified that the distance of notified forest is 560 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Bokaro District (Sl. no. 15, Page no. 75).
7	Gram Sabha	:	BDO, Peterwar vide letter no. 1238, dated 19.06.2023 informed that Gram Sabha conducted on 28.04.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1200/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	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.40 Ha	Life of Mine – 8 year
3	Waste Generation	:	31,250 cum	
4	Stripping Ratio	:	0.073	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	304 - 296 AMSL	
8	Ground Level Elevation	:	305 AMSL	
9	Ultimate Working Depth	:	270 m AMSL	
10	Water Table	:	Post Monsoon – 262 m AMSL Pre Monsoon – 255 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	36.96 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 315 liters / day (94.5 KL/year)	

Production Details

Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1st	32802	109	11850	91846	306
2nd	38304	128	13688	107251	358

3rd	40362	135	5712	113014	377
4th	30600	102	0	85680	286
5th	8820	29	0	24696	82
Total	**150888**	**135 Max.**	**31250**	**422486**	**358 Max.**

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Area	0.00
2	Office	0.00
3	Dumping	0.00
4	Road	0.00
5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt/ Safety Zone	0.00
8	Utilized	0.00
9	Unutilized	2.40
	TOTAL	**2.40**

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)
1	Mining Area	3.68
2	Office	0.01
3	Dumping	0.40
4	Road	0.06
5	Garland drain	0.09
6	Settling Pond	0.00
7	Safety Zone	1.59
8	Unutilized	0.11
	TOTAL	**5.94**

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Area	3.68	Water body
2	Office	0.01	Green Belt

3	Dumping	0.40	Green Belt
4	Road	0.06	Water body
5	Garland drain	0.09	-
6	Settling Pond	0.00	-
7	Safety Zone	1.59	Greenbelt
8	Unutilized	0.11	Greenbelt
	TOTAL	**5.94**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.64 Ha	1,024
2	Along Approach Road		0.535 km	356
TOTAL				**1,380**

- 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 365 X 1500 = Rs 5,47,000 (Gabion Plantation along approach road) 1024 X 500 = 5,12,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	10,59,000	1,05,900
3	Environmental Monitoring (One Day Monitoring) • Ambient Air (3 points) 24 hrs -	--	1,00,000

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	Rs.32,000 • Soil (3 point) - Rs.8,000 • Noise (3 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**		
Total		**10,59,000**	**5,05,900**

Solid Waste Management

During first year 11,850 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.

ISK 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.

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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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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 Nawadih Stone Mine of M/s Maa Vaishno Enterprises (Partners : (i) Shri Bijay Kumar Agarwal (ii) Shri Ritesh Roshan), Village : Nawadih, Thana : Peterwar, Distt.: Bokaro, Jharkhand (2.40 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).

II. 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.

III. 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.

IV. 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.

V. 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.

VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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14. Baliapatra Stone Mine of M/s Navya Stone Works (Partners : (i) Shri Ashish Kumar Dutta (ii) Shri Tajel Ali), Village : Baliapatra, Thana no. : 322, Thana : Maheshpur, Distt.: Pakur, Jharkhand (1.157 Ha).

(Proposal no.: SIA/JH/MIN/493188/2024)

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

This is a new project which has been taken for appraisal on 24.08.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 16,636 Cum. (Max.) / 44,917 Tons (Max.) Per Year

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Baliapatra Stone Mine
2	Lessee:	:	Navya Stone Works, Partner- (1) Ashish Kumar Dutta, (2) S Tajel Ali
3	Lease Address	:	Village : Baliapatra, Thana no. : 322, Thana : Maheshpur, Distt.: Pakur, Jharkhand

4	Lease Area	:	1.157 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital: 78.1 Cr.	Recurring: 8.57 Lakhs per year
7	EMP Budget	:	Capital: 6.80 Lakhs	Recurring: 4.68Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 70,942 cum	Tonnes: 1,91,543.4 tons
10	Mine Life	:	Up to lease period i.e. 19.10.2033.	
11	Man power	:	25 Person	
12	Water Requirement	:	4.862 KLD (Drinking: 0.375 KLD, Dust Suppression: 0.76 KLD, Plantation: 2.967 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	:	Banslai River – 11 Km towards North direction	
17	Nearest Habitation	:	BaliyapatraVillage at 0.11km North-East direction	
18	Nearest Rail Station	:	Nalhati Railway Station is 13.01 km in SE direction.	
19	Nearest Air Port	:	Ranchi Airport, at 105.95 km West direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 1166 Dated- 28/09/2019	
21	Road & Highways	:	MDR (Nalhati-Pakuria road) at 6.11 km South Direction..	

CO-ORDINATES

1	Latitude		From N 24°22'28.081"	To N 24°22'32.619"
2	Longitude		From E 87°44'36.366"	To E 87°44'34.936"

LAND DETAILS

Khaa no.	Plot no.
08	390, 392
18	393(P)
19	131
20	136, 132, 388

STATUTORY CLEARANCES

1	LOI/Lease docs	:	The LoI has been issued by District Mining Office, Pakur vide letter no. 1906/M , dated 30.10.2019.
2	CO	:	The CO, Maheshpur vide letter no. 627/Ra., dated 26.08.2019 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 695/M, dated 24.05.2024 certified that 04 other mining lease area (4.63 Acres, 4.72Acre, 5.90 Acre & 5.79 acres) exists within 500 m radius from proposed project site and total area is 23.90 Acre or 9.67 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 1930, dated 14.09.2019 certified that the proposed project site is out side of Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	:	DFO, Pakur Forest Division vide letter no. 1166, dated 28.09.2019 certified that the distance of Reserved Forest / Protected Forest is more than 250 meter from the proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Pakur District (Sl. no. 43 Page no. 68).
7	Gram Sabha	:	BDO, Maheshpur vide memo no. 1070/Vi. Dated 07.08.2019 inform that Gram Sabha conducted on 22.08.2019.
8	Mine Plan Approval	:	Approved by DMO, Pakur vide Memo no. 858/M, dated 04.06.2024
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	:	0.587 Ha	Life of Mine – Up to lease period i.e. 19.10.2033.
3	Waste Generation	:	4,722cum	Top Soil-3,246 Cum
4	Stripping Ratio	:	1: 17.41 or 0.06	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	79-73 AMSL	
8	Ground Level	:	73 AMSL	

	Elevation		
9	Ultimate Working Depth	:	19 m AMSL
10	Water Table	:	Post Monsoon – 24 m AMSL Pre Monsoon – 19 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	10 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 247.29 liters / day (74.19 KL/year)

Production Details

SUMMARY OF YEAR WISE PRODUCTION						
Years	**Production In Cum/Year**	**Production In Cum/Day**	**O.B Production in Cum/Year**	**Production In Tons/Year**	**Prod. In Tons. /Day**	**Bench Height (AMSL)**
1st	16636	55.45	2,781	44,917	149.72	75 mRL – 69 mRL (Stone)
2nd	11968	39.89	1,941	32,313.6	107.71	74 mRL – 63 mRL (Stone)
3rd	11269	37.56	0.00	30,426.3	101.42	69 mRL – 63 mRL (Stone)
4th	16592	55.31	0.00	44,798.4	149.33	69 mRL – 57 mRL (Stone)
5th	13554	45.18	0.00	36,595.8	121.99	63 mRL – 57mRL (Stone)
Total	**70019**	**55.45 Max.**	**4,722.00**	**1,89,051.1**	**149.72 Max.**	**Depth : 18 m**

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Acres)	Existing Land Use (Ha)
1	Mining Area	0.00	0.00
2	Office	0.00	0.00
3	Dumping	0.00	0.00
4	Miming Road	0.00	0.00
5	Garland drain	0.00	0.00
6	Settling Pond	0.00	0.00
7	Safety Zone	0.00	0.00
8	Stone Stock yards	0.00	0.00
9	Unutilized	2.86	1.157
	TOTAL	**2.86**	**1.157**

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)	Proposed Land Use (Ha)
1	Mining Area	1.45	0.587
2	Office	0.01	0.004
3	Dumping	0.03	0.012
4	Road	0.04	0.016
5	Garland drain	0.06	0.024
6	Settling Pond	0.03	0.012
7	Safety Zone	1.24	0.502
	TOTAL	**2.86**	**1.157**

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual StageLand Use (Acres)	Conceptual StageLand Use (Ha)	Area to be converted in the conceptual period.
1	Mining Area	1.45	0.587	Water body
2	Office	0.01	0.004	Green Belt
3	Dumping	0.03	0.012	Green Belt
4	Road	0.04	0.016	Water body
5	Garland drain	0.06	0.024	-
6	Settling Pond	0.03	0.012	-
7	Safety Zone	1.24	0.502	Greenbelt
	TOTAL	**2.86**	**1.157**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.502 Ha	803
2	Along Approach Road		0.28 km	186
TOTAL				**989**

- 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: 186 X 1500 = Rs 2,79,000 (Gabion Plantation along approach road) 803 X 500 = 4,01,500 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,80,500	68,050
3	Environmental Monitoring (One Day Monitoring) Ambient Air (8 points) 24 hrs -Rs.32,000 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		**6,80,500**	**4,68,050**

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	1 Day
4.	Soil	3 stations	1 Day
5.	Noise	3 stations	1 Day

Solid Waste Management

During mining period 3,246 cum Top soil and 4,722 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.

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 23, 24 & 25.08.2024, 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).

****

The meeting concluded with thanks to all present.

Ashok Kumar Dubey, IFS (Retd.)
Member

25/08/2024
Dr. Ajay Govind Bhatt
Member

Niranjan Lal Agarwalla
Member

Dr. Raju Kumar
Member

Srikant Verma, IFS
Member Secretary

25/08/2024
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.

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. (incase 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, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.

vii. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.

II. Air quality monitoring and preservation

i. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R 277 (E) dated 31st March 2012 (applicable to IF/EAF) as amended from time to time; S.O. 3305 (E) dated 7th December 2015(Thermal Power Plants) as amended from time to time) and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.

iii. The project proponent shall install system carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PMIO and PM25 in reference to PM emission, and S02 and NOx in reference to S02 and NOx emissions) within and outside the plant area (at least at four locations one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions. (case to case basis small plants: Manual; Large plants: Continuous)

iv. The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality / fugitive emissions to Regional Office of MoEf&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

v. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources.

vi. The project proponent shall provide leakage detection and mechanised bag cleaning facilities for better maintenance of bags.

vii. Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.

viii. Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after *briquettingl* agglomeration.

ix. The project proponent shall use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.

x. The project proponent shall provide covered sheds for raw materials like scrap and sponge iron, lump ore, coke, coal, etc.

xi. The project proponent shall provide primary and secondary fume extraction system at all melting furnaces.

xii. Design the ventilation system for adequate air changes as per ACGIH document for all tunnels, motor houses, Oil Cellars.

III. Water quality monitoring and preservation

i. The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R 277 (E) dated 31st March 20 12 (applicable to IF / EAF) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time) and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories. (case to case basis small plants: Manual; Large plants: Continuous)

ii. The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/ sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.

iii. The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

iv. Adhere to 'Zero Liquid Discharge'.

v. Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.

vi. The project proponent shall provide the ETP for effluents of rolling mills to meet the standards prescribed in G.S.R 277 (E) 31st March 2012 (applicable to IF/EAF) as amended from time to time.

vii. Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off

viii. The project proponent shall practice rainwater harvesting to maximum possible extent.

ix. The project proponent shall make efforts to minimise water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.

IV. Noise monitoring and prevention

i. 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.

ii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB (A) during day time and 70 dB(A) during night time.

V. Energy Conservation measures

i. The project proponent shall provide waste heat recovery system (pre-heating of combustion air) at the flue gases of reheating furnaces.

ii. Practice hot charging of slabs and billets/blooms as far as possible.

iii. Ensure installation of regenerative type burners on all reheating furnaces.

iv. Provide solar power generation on rooftops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly.

v. Provide the project proponent for LED lights in their offices and residential areas.

VI. Waste management

i. Used refractories shall be recycled as far as possible.

ii. Oily scum and metallic sludge recovered from rolling mills ETP shall be mixed, dried, and briquetted and reused melting Furnaces

iii. 100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.

iv. The waste oil, grease and other hazardous waste shall be disposed of as per the

v. Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016.

vi. Kitchen waste shall be composted or converted to biogas for further use.(to be decided on case to case basis depending on type and size of plant)

VII. Green Belt

i. Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant

ii. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.

VIII. Public hearing and Human health issues

i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

ii. The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.

iii. 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, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

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.

vi. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the plants shall be implemented.

vii. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

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; PMIO, S02, NOx (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 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.

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 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.

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.

C. <u>Other Conditions:</u>

i. The Authority reserves the right to add any new condition or modify the above conditions or to revoke the clearance if conditions stipulated above are not implemented to the satisfaction of Authority or for that matter for any other Administrative reason.

ii. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.

iii. In case of any deviation or alteration in the project proposed from those submitted to SEIAA, Jharkhand for clearance, a fresh reference should be made to SEIAA to assess the adequacy of the conditions imposed and to incorporate any new conditions if required.